

**Volume**

**#**

**R0378**

BOOK A-378

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# FIELD NOTES

OF THE SURVEY OF THE

Of the ..... Meridian,

In the State of .....

EXECUTED BY

In the capacity of U. S. Surveyor .., under instructions dated ....., 191..,  
issued by the United States Surveyor General to govern surveys included in  
District No. ...., which were approved by the Commissioner of the General Land  
Office, ...., 191.., pursuant to authority contained in the Act of  
Congress dated ....., 191..

Survey commenced ....., 191..

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# FIELD NOTES

OF THE SURVEY OF THE

Of the ..... Meridian,

In the State of .....

EXECUTED BY

In the capacity of U. S. Surveyor....., under instructions dated....., 191.....,  
issued by the United States Surveyor General to govern surveys included in  
Group No. ...., which were approved by the Commissioner of the General Land  
Office, ...., 191....., pursuant to authority contained in the Act of  
Congress dated ....., 191.....

Survey commenced ..... , 191.....

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# FIELD NOTES

OF THE SURVEY OF THE

Of the ..... Meridian,

In the State of .....

EXECUTED BY

In the capacity of U. S. Surveyor .... under instructions dated ..... 191...., issued by the United States Surveyor General to govern surveys included in Group No. ...., which were approved by the Commissioner of the General Land Office, ..... 191..., pursuant to authority contained in the Act of Congress dated ..... 191....

Survey commenced ..... 191....

Survey completed ..... 191....

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# FIELD NOTES

OF THE SURVEY OF THE

Of the ..... Meridian, "

In the State of .....

EXECUTED BY

In the capacity of U. S. Surveyor, under instructions dated, 191, issued by the United States Surveyor General to govern surveys included in Group No., which were approved by the Commissioner of the General Land Office, 191, pursuant to authority contained in the Act of Congress dated, 191.

Survey commenced, 191.

Survey completed, 191.

4-679.

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Book "A"  
BOOK A-378  
FIELD NOTES

M. S. B.

OF THE SURVEY OF THE

Retracement of the 4<sup>th</sup> Standard  
Parallel south through range 24  
East

of the Salt Lake Base and Meridian, Utah.

AS SURVEYED BY

Howard W. Miller, United States Deputy Surveyor,  
assignment group  
Under his Contract No. 4, Utah, dated August 6, 1900

Survey commenced August 19, 1900

Survey completed August 20, 1900

NAMES AND DUTIES OF ASSISTANTS.

Fred Wright, chairman

Ben Egle, chairman

Roscoe Hallett, flagman

Volume

#

R0378

BOOK A-378

## INDEX DIAGRAM.

*Fourth Standard Parallel South  
Township \_\_\_\_\_, Range 24 East.*

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*Meanders Page.*

## PRELIMINARY OATHS OF ASSISTANTS.

We, Fred Wrightand Ben Eagle

do solemnly swear that we will well and faithfully execute the duties of chainmen; that we will level the chain upon even and uneven ground, and plumb the tally pins, either by sticking or dropping the same; that we will report the true distances to all notable objects, and the true lengths of all lines that we assist in measuring, to the best of our skill and ability, and in accordance with instructions given us, in the survey of  
retracement of the 4<sup>th</sup> Standard Parallel South, R 24 E.  
of the S.L.B. & Y., Utah.

Fred Wright

, Chainman.

Ben Eagle

, Chainman.

Subscribed and sworn to before me this 20<sup>th</sup>day of August, 190 }Howard W. Miller

U.S. Surveyor

I, Roscoe Hallett andFlagman

do solemnly swear that we will well and truly perform the duties of ~~marksmen in the establishment of~~  
~~corners~~, according to the instructions given us, to the best of our skill and ability, in the survey of  
retracement of the 4<sup>th</sup> Standard Parallel South through R 24 E.  
of the S.L.B. & Y., Utah.

Roscoe Hallett

, Flagman

, Moundman.

Subscribed and sworn to before me this 20<sup>th</sup>day of August, 190 }Howard W. Miller

U.S. Surveyor

We, \_\_\_\_\_ and \_\_\_\_\_

do solemnly swear that we will well and truly perform the duties of axmen in the establishment of corners and other duties, according to instructions given us, to the best of our skill and ability, in the survey of

, Axman.

, Axman.

Subscribed and sworn to before me this \_\_\_\_\_

day of \_\_\_\_\_, 190 }

I, \_\_\_\_\_, do solemnly swear that I will well and truly perform the duties of flagman according to instructions given me, to the best of my skill and ability, in the survey of

, Flagman.

Subscribed and sworn to before me this \_\_\_\_\_

day of \_\_\_\_\_, 190 }

## Retracement of the Fourth Standard Parallel South, through Range 24 East

chains

Survey commenced August 19, 1910 and executed with a W. and L. E. Gurley solar compass No. 1043. The horizontal limb is provided with one vernier reading to single minutes of arc, which is also the least count of the verniers of the latitude and declination arcs.

The instrument was examined, tested on the true meridian at Salt Lake City, found correct, and was approved by the supervising surveyor, August 8, 1910.

I examine the adjustments of the compass, and correct the level and collimation errors; then to test the solar apparatus by comparing its indications resulting from solar observations made during a.m. and p.m. hours, with a meridian determined by observations on Polaris, I proceed as follows:

At the standard cor. of T. 20 S., Rs. 23 and 24 E., which is a sandstone 10x12x2 ins. above ground, firmly set, and marked and witnessed as described by the surveyor general, latitude  $39^{\circ} 01' 42''$  N.; longitude  $109^{\circ} 20' 49''$  W., I set off  $39^{\circ} 01\frac{3}{4}'$  N., on the latitude arc;  $12^{\circ} 51'$  N., on the decl. arc; and at 4h.06m.p.m.l.m.t., determine with the solar a meridian, and mark a point thereof, on a stone firmly set in the ground 5 chs. N. of my station.

At 9h.42.lm.p.m.l.m.t., by my watch, which carries correct l.m.t. I observe Polaris at eastern elongation in accordance with the Manual of Instructions, and mark the point thus determined on a peg driven in the ground, 5 chs, N. of my station.

August 19, 1910

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August 20: At 6 h.30m.a.m.l.m.t.I lay off the azimuth of Polaris,  $1^{\circ} 30.6'$  to the west and find that the Polaris meridian coincides with the solar meridian determined August 19.

At 7h.06m.a.m.l.m.t.I set off  $39^{\circ} 01' 42''$  N., on the lat. arc;  $12^{\circ} 39\frac{1}{2}'$  N. on the decl. arc; and determine a meridian with the solar . this meridian also agrees with

Range 24 East

Retracement of the fourth standard Parallel south, through

- |        |  |
|--------|--|
| chains | <p>the two previous meridians. I therefore conclude that the adjustments of the instrument are satisfactory. The magnetic bearing of the true meridian at 7 h.30m.a.m. is N. <math>15^{\circ} 35'</math> W., the angle thus determined gives the magnetic decl. <math>15^{\circ} 35'</math> E.</p> <hr/> <p>From the tp. cor. already described,</p> <p>I retrace</p> <p>East, bet. secs. 6 and 31</p> |
| 40.02  | <p>Fall 5 lks. S. of the standard <math>\frac{1}{4}</math> sec. cor. which is a pine post, 12x3x3 ins. above ground, firmly set and marked and witnessed as described by the Surveyor General. The true bearing of this line is therefore N. <math>89^{\circ} 56'</math> E., and the distance is 40.02 chs.</p> <p>From the <math>\frac{1}{4}</math> sec. cor I continue</p> <p>East</p>               |
| 36.87  | <p>N. 3 lks is the closing cor, of secs. 5 and 6 T. 21 S., R. 24 E., which is a limestone 5 x 6 x 6 ins . above ground, firmly set, and marked and witnessed as described by the Surveyor General.</p>   |
| 40.05  | <p>Fall 3 lks S. of the standard cor. of secs. 31 and 32 , which is a pine post, 12 x 3 x 3 ins. above ground, firmly set, and marked and witnessed as described by the Surveyor General.</p> <p>The true bearing of this half mile is N. <math>89^{\circ} 57'</math> E., and the distance is 40.05 chs.</p> <hr/> <p>East, retracing line bet. secs. 5 and 32</p>                                     |
| 40.02  | <p>Fall 1 lk. S. of the standard <math>\frac{1}{4}</math> sec. cor. which is a sandstone, 7 x 10 x 4 ins. above ground, firmly set, and marked and witnessed as described by the Surveyor General</p> <p>The true bearing of this line is therefore N. <math>89^{\circ} 59'</math> E., and the distance is 40.02 chs.</p> <p>From the <math>\frac{1}{4}</math> sec. cor. I continue</p> <p>East.</p>   |
| 37.00  | <p>N. 5 lks. is the closing cor. of secs. 4 and 5 T. 21 S., R. 24 E., which is a sandstone 6 x 12 x 4 ins. above</p>   |

Retracement of the fourth standard Parallel south through Range 24

chains

ground, firmly set, and marked and witnessed as described by the Surveyor General.

40.16

Fall 5 lks. S. of the standard cor. of sec. 32 and 33 which is a sandstone, 10 x 14 x 4 ins above ground, firmly set, and marked and witnessed as described by the Surveyor General.

The true bearing of this line is N. 89° 56' E., and the distance is 40.16 chs.

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East, retracing line bet. sec. 4 and 33

40.12

Fall 11 lks. S. of the standard  $\frac{1}{4}$  sec. cor. which is a limestone 10 x 8 x 4 ins. above ground, firmly set, and marked and witnessed as described by the Surveyor General.

The true bearing of this line is N. 89° 51' E., and the distance is 40.12 chs,

Note: The sky was overcast at the noon hour, observations for latitude were impossible.

From the  $\frac{1}{4}$  sec. cor. I continue

East.

36.84

S. 1 lk. is the closing cor. of secs. 3 and 4, T.21 S., R. 24 E., which is a sandstone 5 x 10 x 4 ins. above ground, firmly set, and marked and witnessed as described by the Surveyor General.

39.94

Fall 1 lk. N. of the standard cor. of secs. 33 and 34 which is a sandstone 6 x 10 x 8 ins. above ground, firmly set, and marked and witnessed as described by the Surveyor General.

The true bearing of this line is S. 89° 59' E. and the distance is 39.94 chs.

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East, retracing bet. secs. 3 and 34

39.98

Fall 5 lks. S. of the standard  $\frac{1}{4}$  sec. cor. which is a sandstone 10 x 10 x 6 ins above ground, firmly set, and marked and witnessed as described by the Surveyor General

The true bearing of this line is N. 89° 56' E., and the distance is 39.98 chs.

From the  $\frac{1}{4}$  sec. cor. I continue

East

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Retracement of the fourth standard Parallel south, through Range 24 East

chains.

37.25 S. 1 lk. is the closing cor. of secs. 2 and 3, T. 21 S., R. 24 E., which is a sandstone 6 x 10 x 6 ins. above ground firmly set, and marked and witnessed as described by the Surveyor General.

40.43 Fall 1 lk. N. of the standard cor. of secs. 34 and 35 which is a sandstone, 15 x 10 x 5 ins. above ground, firmly set, and marked and witnessed as described by the Surveyor General.

The true bearing of this line is S. 89° 59' E., and the distance is 40.43 chs.

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East, retracing bet. secs. 2 and 35

40.25 Fall 4 lks. S. of the standard  $\frac{1}{4}$  sec. cor., which is a sandstone 8 x 8 x 4 ins. above ground, firmly set, and marked and witnessed as described by the Surveyor General. The true bearing of this line is N. 89° 57' E., and the distance is 40.25 chs.

From the  $\frac{1}{4}$  sec. cor. I continue  
East.

36.83 N. 1 lk. is the closing cor. of secs. 1 and 2, T. 21 S., R. 24 E., which is a sandstone 6 x 10 x 4 ins above ground, firmly set, and marked and witnessed as described by the Surveyor General.

40.05 Fall 1 lk. S. of the standard cor. of secs. 35 and 36 which is a sandstone 5 x 9 x 5 ins. above ground, firmly set, and marked and witnessed as described by the Surveyor General.

The true bearing of this line is N. 89° 59' E., and the distance is 40.05 chs.

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East, retracing line bet. secs. 1 and 36

40.06 Fall 4 lks. S. of the standard  $\frac{1}{4}$  sec. cor. which is a sandstone 10 x 8 x 5 ins. above ground, firmly set, and marked and witnessed as described by the Surveyor General. The true bearing of this line is N. 89° 57' E., and the distance is 40.06 chs.

Retracement of the Fourth standard Parallel south, through Range 24

chains	From the $\frac{1}{4}$ sec. cor. I continue East.
36.94	N. 5 lks. is the closing cor. of T. 21 S., Rs. 24 and 25 E., which is a sandstone 6 x 10 x 4 ins. above ground, firmly set, and marked and witnessed as described by the Surveyor General.
40.14	Fall 5 lks. S. of the standard cor. of T. 20 S., Rs. 24 and 25 E., which is a sandstone 10 x 8 x 4 ins. above ground firmly set, and marked and witnessed as described by the Surveyor General.  The true bearing of this line is therefore N. $89^{\circ} 56'$ E., and the distance is 40.14 chs.  The marks on this stone are nearly obliterated. I destroy all traces of the old cor. and reestablish it at the same point as follows:  Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in the ground for cor. of T. 20 S., Rs. 24 and 25 E., marked on brass cap

T 20 S on N. half,  
R 24 E S 36 in NW., and  
R 25 E S 31 in NE quadrant; dig pits 30 x 24 x 12 ins., crosswise on each line, E. and W. 4 ft., and N. of post, 8 ft. dist., raise a mound of earth 5 ft. base,  $2\frac{1}{2}$  ft. high, N. of cor.

August 20, 1910.

For general description see book "D" of this survey

Howard W. Miller

U. S. Transitman.

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## FINAL OATHS OF DEPUTY SURVEYOR AND HIS ASSISTANTS.

## LIST OF NAMES.

A list of the names of the individuals employed by Howard Wm. Miller  
Instrument man,  
United States Deputy Surveyor, to assist in running, measuring, and  
marking the lines and corners described in the foregoing field notes of the ~~survey of retracement~~  
of the 4<sup>th</sup> Standard Parallel South through Range 24 East  
of the S.L.B. & M., Utah,  
showing the respective capacities in which they acted:

Fred Wright, Chairman.  
Ben Egle, Chairman.  
Roscoe Hallert, Moundman.  
Roscoe Hallert, Moundman.  
Roscoe Hallert, Axman.  
Roscoe Hallert, Axman.  
Roscoe Hallert, Flagman.

## FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted Howard Wm. Miller  
Instrument man, United States Deputy Surveyor, in surveying all  
those parts or portions of the Retracement of the Fourth  
Standard Parallel South thru Range  
24 East

of the Salt  
Lake Base & meridian, State of Utah, which are represented  
in the foregoing field notes as having been surveyed by him and under his direction; and that said survey  
has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the  
corner monuments established, according to the instructions furnished by the United States Surveyor  
General for Utah.

Fred Wright, Chairman.  
Ben Egle, Chairman.  
Roscoe Hallert, Flagman.  
Roscoe Hallert, Moundman.  
Roscoe Hallert, Axman.  
Roscoe Hallert, Axman.  
Roscoe Hallert, Flagman.

Subscribed and sworn to before me this 20<sup>th</sup>  
day of August, 1910



Howard Wm. Miller  
U.S. Instrument man

## FINAL OATH OF UNITED STATES DEPUTY SURVEYOR.

I, \_\_\_\_\_, United States Deputy Surveyor, do solemnly swear that, in pursuance of a contract received from \_\_\_\_\_, United States Surveyor General for \_\_\_\_\_, bearing date of the \_\_\_\_\_ day of \_\_\_\_\_, 190\_\_\_\_\_, I have well, faithfully, and truly, in my own proper person, and in strict conformity with the instructions furnished by the United States Surveyor General for \_\_\_\_\_, the Manual of Surveying Instructions, and the laws of the United States, surveyed all those parts or portions of \_\_\_\_\_.

For final oath of transitman see book "E" T.20 S., Rs.25 & 26 E..

of the \_\_\_\_\_ meridian, in the \_\_\_\_\_ of \_\_\_\_\_, which are represented in the foregoing field notes as having been surveyed by me, and under my direction; and I do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the Manual of Surveying Instructions, and the special written instructions of the United States Surveyor General for \_\_\_\_\_ and in the specific manner described in the field notes, and that the foregoing are the original field notes of such survey.

*United States Deputy Surveyor.*

Subscribed by said \_\_\_\_\_, and sworn to before me }  
this \_\_\_\_\_ day of \_\_\_\_\_, 190\_\_\_\_\_ }



## APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Salt Lake City, Utah, June 25, 1903.

The foregoing field notes of the survey of retrace of the 4th Standard Parallel South, through Range No. 24 East of the Salt Lake Base and Meridian, Utah,

executed by \_\_\_\_\_ Howard W. Miller  
under his contract No. \_\_\_\_\_, dated \_\_\_\_\_, 190\_\_\_\_\_, having been critically examined, and the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

Howard W. Miller  
United States Surveyor General.

I certify that the foregoing transcript of the field notes of the above-described surveys in \_\_\_\_\_, has been correctly copied from the original notes on file in this office.

United States Surveyor General.

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BOOK A-378

Book "B"

D. S. B.

## FIELD NOTES

Re and  
OF THE SURVEY OF THE

1911

retracement of the east boundary of  
 T. 20 S., R. 24 E.

of the Salt Lake Base and Meridian,  
 Utah

AS SURVEYED BY

Howard W. Miller, United States ~~Surveyor~~ Transitman  
 assignment Group Under his Contract No. 41 dated August 6, 1910

Survey commenced August 21, 1910

Survey completed August 22, 1910

**NAMES AND DUTIES OF ASSISTANTS.**

Fred Wright - chairman

Karl Rothermund, chairman

Roscoe Hallett, moundsman

Ben Egle, flagman

BOOK A-378

INDEX DIAGRAM.

*Township 20 South, Range 24 East.*

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*Meanders Page.....*

## PRELIMINARY OATHS OF ASSISTANTS.

WE, Fred Wright and Karl Rothermund  
do solemnly swear that we will well and faithfully execute the duties of chainmen; that we will level the  
chain upon even and uneven ground, and plumb the tally pins, either by sticking or dropping the same; that  
we will report the true distances to all notable objects, and the true lengths of all lines that we assist in  
measuring, to the best of our skill and ability, and in accordance with instructions given us, in the survey of  
and retracement of the east boundary of T20 S.R2 E.  
S.L.B. & M., Utah.

Fred Wright, Chainman.

Karl Rothermund, Chainman.

Subscribed and sworn to before me this 21  
day of August, 1901



Howard W. Miller  
Instrumentman G.P.O.

WE, Rosece Hallett and  
do solemnly swear that we will well and truly perform the duties of moundmen in the establishment  
of corners, according to the instructions given us, to the best of our skill and ability, in the survey of  
and retracement of the east boundary of T20 S.R2 E.  
S.L.B. & M., Utah.

Rosece Hallett, Moundman.

, Moundman.

Subscribed and sworn to before me this 21  
day of August, 1901



Howard W. Miller  
Instrumentman G.P.O.

WE, ..... and .....  
do solemnly swear that we will well and truly perform the duties of axmen in the establishment of corners  
and other duties, according to instructions given us, to the best of our skill and ability, in the survey of

, Axman.

, Axman.

Subscribed and sworn to before me this 21  
day of August, 1901



I, Ben Egle, do solemnly swear that I will well and truly  
perform the duties of flagman according to instructions given me, to the best of my skill and ability, in the  
survey and retracement of the east boundary of T20 S.R2 E.  
S.L.B. & M., Utah.

Ben Egle, Flagman.

Subscribed and sworn to before me this 21  
day of August, 1901



Howard W. Miller  
Instrumentman G.P.O.

Retracement of the east boundary T. 20 S. R. 24 E.  
chain

Survey commenced August 21, 1910  
and executed with a F.W. & L. E.  
Gurley solar compass No 1043.  
For description and test of instru-  
ment see book A of this survey.  
At the standard cor of T 20 S., R.  
24 S. 25 E. heretofore described in  
latitude  $39^{\circ} 01' 42''$  N., longitude  
 $109^{\circ} 13' 12''$  W. I set off  $39^{\circ} 01' 34''$  on  
the latitude arc;  $12^{\circ} 12'$  N on the  
decl. arc; and at 4<sup>h</sup> 03<sup>m</sup>. p.m.l.  
m.t. determine with the solar  
a meridian and mark a point  
in the line thus determined on  
a peg driven in the ground, 5 chs  
N. of the cor.  
At 9<sup>h</sup>. 34.3<sup>m</sup>. p.m.l.m.t. I observe  
Polaris at eastern elongation in  
accordance with the Manual of  
Instructions and mark a point  
in the line thus determined on  
a peg driven in the ground, 5  
chs. N. of my station.

August 21, 1910

August 22: At 7<sup>h</sup>. a.m. l. m.t.  
I lay off the azimuth of Polaris  
 $1^{\circ} 30.6'$  to the west and find that  
my Polaris meridian agrees with  
the solar meridian determined  
August 21.

At 7<sup>h</sup> 33<sup>m</sup> a.m. l. m.t. I set off  
 $39^{\circ} 01' 34''$  on the lat. arc.  $11^{\circ} 59' 7''$   
on the decl. arc and determine  
a meridian with the solar.  
This meridian also agrees with the  
Polaris meridian. I therefore  
conclude that the instrument is  
in adjustment.

The "magnetic bearing of the true

Retrocurement of the east boundary T 20 S R 24 E.

chains

meridian is  $N 15^{\circ} 30' W.$ , which gives the magnetic declination  $15^{\circ} 30' E.$

From the 1/4 sec. cor. already described I run

North, retracing bet. secs. 31 + 36

fall 302 lks. West of the 1/4 sec. cor. which is a sandstone  $20 \times 16 \times 3$  ins. marked and witnessed as described by the surveyor general. The true bearing of the line is  $N 4^{\circ} 20' E.$ , and the distance is 39.87 chs.

From the 1/4 sec. cor. I continue North.

40.02 The cor. of secs. 25, 30, 31 + 36 which is a sandstone  $18 \times 12 \times 5$  ins. marked and witnessed as described by the surveyor general.

I destroy all traces of the old cor. and reestablish it at the same point as follows

Set an iron post, 3 ft long, 3 ins. in dia., 2 ins. in the ground for cor. of secs. 25, 30, 31 + 36 marked on brass cap

T 20 S on N. half

R 24 E S 25 in NW.,

R 25 E S 30 in NE.,

S 31 in SE and

S 36 in SW. quadrant.

raise a mound of stone, 2 ft base  $1\frac{1}{2}$  ft. high W. of cor.

Pits impracticable

The true bearing of this line is North and the distance is 40.02 chs

North, retracing line bet. secs. 25 + 30  
fall 15 lks. W. of the 1/4 sec. cor.

3.

Retracement east boundary T 20 S R 24 E  
chain.

Which is a sandstone  $18 \times 8 \times 3$   
in. with marks. nearly obliterated  
I destroy all traces of the old  
cor and re-establish it at the  
same point as follows. Set an  
iron post, 3 ft. long, 1 in. in dia.,  
26 in. in the ground for  $\frac{1}{4}$  sec  
cor. marked on brass cap  $\frac{1}{4} S$   
 $\frac{1}{4} S$  on W. half and  $\frac{1}{4} S$  on E.  
half, dig pits  $18 \times 18 \times 12$  in. N. & S.  
of post. 3 ft. dist, raise a mound  
of earth 3 ft. base,  $1\frac{1}{2}$  ft. high W.  
of cor.

The true bearing of this line is  
 $71.0^{\circ} 13' E.$  and the distance is  
4000 chs.

From the  $\frac{1}{4}$  cor. I continue  
North

40.00 Fall 16 lks E. of the cor. of secs  
19, 24, 25 & 30 which is a  
sandstone  $10 \times 8 \times 6$  in. above  
ground. and marked as  
described by the surveyor general  
I destroy all traces of the old  
cor. and re-establish it at the  
same point as follows.

Set an iron post, 3 ft. long, 3 in. in  
dia., 24 in. in the ground for  
cor. of secs. 19, 24, 25 & 30  
marked on brass cap

T 20 S on N. half

R 24 E S 24 on NW.

R 25 E S 19 on NE.

S 30 on SE. and

S 25 on SW. quadrant.

dig pits,  $18 \times 18 \times 12$  in. in each  
sec.  $5\frac{1}{2}$  ft. dist, raise a mound  
of earth, 4 ft base, 2 ft. high W.  
of cor.

The true bearing of this line is

Retracement east boundary of T 20 S R 24 E.  
claims.

N. 0° 14' W., and the distance is  
4000 chs.

4000 North, retracing bet. secs. 19 & 24.  
The  $\frac{1}{4}$  sec. cor. which is a  
sandstone  $12 \times 10 \times 7$  ins. above  
ground, firmly set, and marked  
I witnessed as described by the  
surveyor general.

From the  $\frac{1}{4}$  sec. cor. I continue  
North

4000 The cor. of secs. 13, 18, 19 & 24 which is a sandstone  
 $16 \times 9 \times 5$  ins. with marks nearly  
obliterated. I destroy all traces  
of the old cor., and reestablish it  
at the same point as follows:  
Set an iron post, 3 ft. long, 3 in. in  
dia.,  $2\frac{1}{4}$  ins. in the ground and  
mound of stone for cor. of secs  
13, 18, 19 & 24 marked on Brase  
Cap

T 20 S on N. half  
R 24 E S 13 in NW.  
R 25 E S 18 in NE.,  
S 19 in SE. and  
S 24 in SW. quadrant,  
raise a mound of stone, 2 ft base,  
 $1\frac{1}{2}$  ft high W. of cor.  
Pits impracticable.

4000 North, retracing bet. secs. 13 & 18.  
Fall 3 lbs W of the  $\frac{1}{4}$  sec. cor.  
which is a sandstone.  $18 \times 8 \times 5$   
ins. marked and witnessed  
as described by the surveyor  
general.

The true bearing of this line is  
N. 0° 03' E and the distance is  
4000 chs

From the  $\frac{1}{4}$  sec. cor. I continue

Retroacement east boundary T 20 S R 24 E.  
chains.

North.

4000 Fall 5 lks. E. of the cor. of secs. 7, 12, 13 & 18 which is a sandstone 18 x 9 x 6 ins. marked and witnessed as described by the surveyor general. I destroy all traces of the old cor. and re-establish it at the same point as follows.

Set an iron post, 3 ft long, 3 ins. in dia., 24 ins in the ground for cor. of secs. 7, 12, 13 & 18 marked on brass cap

T 20 S on N. half  
 R 24 E S 12 in NW,  
 R 25 E S 7 in NE,  
 S 18 in SE and  
 S 13 in SW quadrant,  
 raise a mound of stone, 2 ft.  
 base, 1 $\frac{1}{2}$  ft high W. of cor.

Pits impracticable

The true bearing of this line is  
 N. 0° 05' W. and the distance is  
 40.00 chs.

North, retracing line bet. secs.

7 & 12.

40.48 Fall 3 lks. W. of the  $\frac{1}{4}$  sec. cor. which is a sandstone, 15 x 8 x 5 ins. above ground, firmly set and marked and witnessed as described by the surveyor general. I destroy all traces of the old cor and re-establish it at the same point as follows

Set an iron post, 3 ft. long, 1 in in dia., 26 ins. in the ground for  $\frac{1}{4}$  sec. cor. marked on brass cap  
 $\frac{1}{4}$  S 12 on W. half and S 7 on E. half, raise a mound of stone

Retracement east boundary T 20 S R 24 E  
chains.

2 ft. base,  $1\frac{1}{2}$  ft. high W. of cor.  
Pits impracticable.  
The true bearing of this line is  
 $N. 0^{\circ} 03' E.$ , and the distance is  
40.48 chs.

From the  $\frac{1}{4}$  sec. cor. I continue  
North.

40.27 The cor. of secs. 1, 6, 7 & 12 which  
is a sandstone,  $16 \times 6 \times 6$  ins  
above ground, firmly set  
and marked and witnessed  
as described by the surveyor  
General. I remark old cor and  
new accessories.

North, retracing bet secs. 1 & 6.

40.20 The  $\frac{1}{4}$  sec. cor. which is a  
pine stake, 2 ins. sq. with marks  
obliterated. I destroy all traces  
of the old cor and re-establish  
it at the same point as follows  
Set an iron post, 3 ft. long, 1 in.  
in dia., 26 ins. in the ground for  
 $\frac{1}{4}$  sec. cor. marked on brass cap  
 $\frac{1}{4} S 1$  on W half and  $S 6$  on E half  
dig pits  $18 \times 18 \times 9$  2 ins. N. & S. of  
post 3 ft. dist., raise a mound of  
earth 3 ft. base,  $1\frac{1}{2}$  ft. high W. of cor.  
From the  $\frac{1}{4}$  sec. cor. I continue  
North.

42.17 Hall 5 ins W. of the cor. of T 20 S R 24 E  
which is a sand-  
stone  $12 \times 10 \times 7$  ins above ground  
firmly set and marked and  
witnessed as described by the  
surveyor general.

The true bearing of this line is  
 $N. 0^{\circ} 04' E.$ , and the distance is  
42.17 chs.

August 22: At this cor. I set off

chain  
Replacement of the east boundary T 20 S R 24 E

$11^{\circ} 54' 45'' N.$  on the decl. arc; and at  $12^h 03^m$  p.m. I m't observe the sun on the meridian, the resulting lat is  $39^{\circ} 07'$

The line between secs 7 + 12 is out of limits in distance and as T 20 S R 24 E has been subdivided the range line between R 24 + 25 E is unchangeable. I therefore return to the cor. of secs 7, 12, 13 + 18 heretofore described and run No<sup>o</sup> 05° E. bet secs 7 + 12 setting cors. to two secs and  $\frac{1}{4}$  cors for one sec. only, referring to T 20 S R 24 E. Over rolling land through scattering forest of cedar + pinon gradually descend.

40.00 Set an iron post, 3 ft. long, 1 in. in dia., 26 in. in the ground for  $\frac{1}{4}$  sec. cor. on E bdy sec 12 marked on brass cap  $\frac{1}{4}$  S 12 on W half, raise a mound of stone 2 ft base,  $\frac{1}{2}$  ft. high W. of cor.  
This impracticable.

40.48 Reestablish  $\frac{1}{4}$  sec. cor. I destroy all marks pertaining to sec 12  
Dhence north

Leave cedar + pinon, bears NE. & SW.  
Set an iron post, 3 ft. long 3 in. in dia., 24 in. in the ground for cor. of secs 1 + 12 marked on brass cap

T 20 S on N. half,

R 24 E S 1 in NW. and

S 12 in SW. quadrant,  
dig pits  $18 \times 18 \times 12$  in each sec  
NW. SW. of post  $\frac{3}{4}$  ft dist.,  
raise a mound of earth  $3\frac{1}{2}$  ft  
base, 2 ft. high W. of cor.

Resurvey East boundary T 20 S R 24 E.

Land rolling with NW slope.  
Some sage brush undergrowth  
& some good grass for grazing.  
Soil, gravelly land rocky surface  
sub soil, clay, very dry.  
Timber scattering cedar & juniper.

North bet secs. 1 + 6.

Over gently rolling land.

0.75 The old cor of secs. 1, 6, 7 + 12.

I destroy all marks and accessories  
pertaining to secs 1 + 12.

14.000 Set an iron post, for  $\frac{1}{4}$  sec. cor in  
East boundary sec 1, marked on  
brass cap  $1\frac{1}{4}S$ , on W. half, dig  
pits  $18 \times 18 \times 12$  ins. N. + S. of post, 3 ft.  
dist, raise a mound of earth 3 ft.  
base,  $1\frac{1}{2}$  ft. high W. of cor.

140.95 The old  $\frac{1}{4}$  sec. cor. I destroy all  
marks pertaining to sec 1, thence  $N.0^{\circ}04' E.$

83.12 The cor. of T's 19 + 20 S., R's 24 + 25 E  
heretofore described.  
Land rolling with easterly drain.  
Soil clay, very hard & dry. Sub  
soil clay. No undergrowth. No grass.  
No timber.

August 22, 1910

For general description see book  
"D" of this survey

Howard W. Miller  
Instrumentman S. S. O.

## FINAL OATHS OF DEPUTY SURVEYOR AND HIS ASSISTANTS.

## LIST OF NAMES.

A list of the names of the individuals employed by

Howard W. Miller  
Instrumentman

, United States Deputy Surveyor, to assist in running, measuring, and marking the lines and corners described in the foregoing field notes of the survey of the retracement of the east boundary of T 20 S R 2 x E  
S. L. B. & M., Utah, showing the respective capacities in which they acted:

Fred Wright

, Chainman.

Karl Rothermund

, Chainman.

Rosece Hallett

, Moundman.

, Axman.

Ben Egle

, Axman.

, Flagman.

## FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted

Howard W. Miller

Instrumentman

, United States Deputy Surveyor, in surveying all

those parts or portions of the survey & retracement of the  
east boundary of T 20 S R 2 x E

Lake Baseline meridian, State of Utah, which are represented

in the foregoing field notes as having been surveyed by him and under his direction; and that said survey has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the corner monuments established, according to the instructions furnished by the United States Surveyor

General for Utah

Fred Wright

, Chainman.

Karl Rothermund

, Chainman.

Rosece Hallett

, Moundman.

, Moundman.

, Axman.

, Axman.

Ben Egle

, Flagman.

Subscribed and sworn to before me this 22  
day of August, 1910.



Howard W. Miller  
Instrumentman G.S.C.

## FINAL OATH OF UNITED STATES DEPUTY SURVEYOR.

I, \_\_\_\_\_, United States Deputy Surveyor, do solemnly swear that, in pursuance of a contract received from \_\_\_\_\_, bearing date of the \_\_\_\_\_ day of \_\_\_\_\_, 190\_\_\_\_\_, I have well, faithfully, and truly, in my own proper person, and in strict conformity with the instructions furnished by the United States Surveyor General for \_\_\_\_\_, the Manual of Surveying Instructions, and the laws of the United States, surveyed all those parts or portions of \_\_\_\_\_.

For final oath of transitman see book "Y" T. 25 S., R. 26 E.

of the \_\_\_\_\_

meridian, in the \_\_\_\_\_ of \_\_\_\_\_, which are represented in the foregoing field notes as having been surveyed by me, and under my direction; and I do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the Manual of Surveying Instructions, and the special written instructions of the United States Surveyor General for \_\_\_\_\_ and in the specific manner described in the field notes, and that the foregoing are the original field notes of such survey.

*United States Deputy Surveyor.*

Subscribed by said \_\_\_\_\_, and sworn to before me }  
this \_\_\_\_\_ day of \_\_\_\_\_, 190\_\_\_\_\_ }



## APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Salt Lake City, Utah, June 25, 1913, 190x

The foregoing field notes of the survey of retrace and survey of the East Boundary of Township No. 20 South, Range No. 24 East of the Salt Lake Base and Meridian, Utah.

executed by Howard W. Miller  
under his contract No. A \_\_\_\_\_, dated August 6, 1910, 190x, having been critically examined, and the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

*Howard W. Miller*  
United States Surveyor General.

I certify that the foregoing transcript of the field notes of the above-described surveys in \_\_\_\_\_, has been correctly copied from the original notes on file in this office.

United States Surveyor General.

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FILED

FEB 25 1911

## Book "C"

BOOK A-378

M.D.B.

## FIELD NOTES

Re-surveyment  
OF THE SURVEY OF THE

North and the West boundaries of  
T. 20 S., R. 24 E.

of the Salt Lake Base and Meridian, Utah

AS SURVEYED BY

Howard Miller

Transitman

assignment

, United States Deputy Surveyor,

Under his contract No. 4, Utah, dated August 6, 1910

Survey commenced August 22, 1910

Survey completed August 30, 1910

JULY 1955

**NAMES AND DUTIES OF ASSISTANTS.**

Fred Wright, chairman

Karl Rothermund, chairman

Roscoe C. Hallett, moundsman

Ben Egle, flagman

BOOK A-378

## INDEX DIAGRAM.

*Township 20 South, Range 24 East*

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30	29	28	27	26	25
31	32	33	34	35	36

*Meanders Page*

## PRELIMINARY OATHS OF ASSISTANTS.

WE, Fred Wrightand Karl Rothermund

do solemnly swear that we will well and faithfully execute the duties of chainmen; that we will level the chain upon even and uneven ground, and plumb the tally pins, either by sticking or dropping the same; that we will report the true distances to all notable objects, and the true lengths of all lines that we assist in measuring, to the best of our skill and ability, and in accordance with instructions given us, in the survey of  
the retrace ment of the north & west boundaries of T 20 S R 24  
 S.I.B. & M., Utah.)

Fred Wright

, Chainman.

Karl Rothermund, chairman.Subscribed and sworn to before me this 22<sup>nd</sup>day of August, 1910 }WE, Roseoy C. Hallett

and

do solemnly swear that we will well and truly perform the duties of moundman in the establishment of corners, according to the instructions given us, to the best of our skill and ability, in the survey of  
the retrace ment of the north & west boundaries of T 20 S R 24  
 S.I.B. & M., Utah)

Roseoy D. Hallett

, Moundman.

, Moundman.

Subscribed and sworn to before me this 22<sup>nd</sup>day of August, 1910 }Howard Wmille

U. S. Instrumentman

WE,

and

do solemnly swear that we will well and truly perform the duties of axmen in the establishment of corners and other duties, according to instructions given us, to the best of our skill and ability, in the survey of

, Axman.

, Axman.

Subscribed and sworn to before me this

day of \_\_\_\_\_, 190 }

I, Ben Egle

, do solemnly swear that I will well and truly

perform the duties of flagman according to instructions given me, to the best of my skill and ability, in the  
survey of the retrace ment of the north & west boundaries of T 20 S R 24  
 S.I.B. & M., Utah.)

Ben Egle

, Flagman.

Subscribed and sworn to before me this 22<sup>nd</sup>day of August, 1910 }Howard Wmille

U. S. Instrumentman

Retracement. N. Boundary T. 20 S., R. 24 E.

chains

Survey commenced August 22, 1910  
and executed with a W. & L. E. Gurley  
Solar compass No. 10.43.

For description and test of instrument  
see book "A" of this survey.  
I know the instrument to be in  
adjustment by observations made  
on Polaris August 19, 1910.

August 22: I begin at the cor. of secs.  
19 & 20 S., R. 24 & 25 E. heretofore  
described.

For solar observation see line bet.  
secs. 31 & 36 book "B" of this survey.  
Hence I run

West, retracing bet. secs. 1 & 36.

40.00 Fall 15 lks. N. of the  $\frac{1}{4}$  sec. cor.  
which is a pine post,  $2\frac{1}{2}$  ins. sq.  
1 ft. above ground, with marks  
nearly obliterated. I destroy all traces  
of the cor. and reestablish it at the  
same point as follows.

Set an iron post, 3 ft. long, 1 in. in  
dia., 26 ins. in the ground for  
 $\frac{1}{4}$  sec. cor. marked on brass cap  
 $\frac{1}{4} S 36$  on N. half &  $S 1$  on S. half.  
dig pits  $18 \times 18 \times 12$  ins. E. & W. of  
post 3 ft. distant and raise a  
mound of earth  $3\frac{1}{2}$  ft. base  $1\frac{1}{2}$  ft.  
high N. of corner.

From the  $\frac{1}{4}$  cor. I continue  
West.

39.92 Fall 15 lks. N. of the cor. of secs.  
1, 2, 35 & 36 which is a pine post,  
3 ins. sq. 1 ft. high, marks obliterated.  
I destroy all traces of the old cor.  
and reestablish it at the same  
point as follows.

Set an iron post, 3 ft. long, 3 ins. in  
dia., 24 ins. in the ground for  
cor. of secs. 1, 2, 35 & 36, marked

44 Retracement N. bdy. T 20 S., R 24 E.  
chain.

on brass cap.

T 19 S R 24 E on N. half

T 20 S on S. half.

S 35 in NW,

S 36 in NE.,

S 1 in SE., and

S 2 in SW quadrant,

dig pits  $18 \times 18 \times 12$  ins. in each sec.  $5\frac{1}{2}$  ft. dist. and raise a mound of earth, 4 ft. base; 2 ft. high W. of cor.

The true course of this line is S  $89^\circ 47'$  W., and the distance is 79.92 chs.

August 22, 1910

August 26: For solar observation  
see line bet. secs. 15 + 16, Book 10  
of this survey.

From the cor. of secs. 12, 35 + 36  
heretofore described

True

West, retracing line bet. secs. 2 + 35

H. 0.02 Fall 15 lks. N. of the  $\frac{1}{4}$  sec. cor.,  
which is a greatly decayed post  
with marks obliterated. I destroy  
all traces of the old cor. and re-  
establish it at the same point as  
follows:

Set an iron post, 3 ft. long, 1 in. in dia.  
26 ins. in the ground for  $\frac{1}{4}$  sec.  
cor. marked on brass cap  $\frac{1}{4} S 35$   
on N. half and S 2 on S. half.,  
dig pits  $18 \times 18 \times 12$  ins. E. + W. of  
post, 3 ft. dist., and raise a mound  
of earth,  $3\frac{1}{2}$  ft. base,  $1\frac{1}{2}$  ft. high  
N. of cor.

From the  $\frac{1}{4}$  cor. I continue  
West.

H. 0.02 Fall 15 lks. N. of the cor. of secs.

## Retracement North Boundary T 20 S R 24 E.

June

2, 3, 34 & 35 which is a fine post.  
4 ins. sq. 1 ft above ground, the  
marks are nearly obliterated.  
I destroy all traces of the old cor.  
and re-establish it at the same  
point as follows.

Set an iron post, 3 ft. long, 3 ins. dia.  
24 ins. in the ground, for cor of  
secs. 2, 3, 34 & 35, marked on  
brass cap

T 19 S R 24 E on N. half

T 20 S on S half

S 34 in NW.,

S 35 in NE.,

S 2 in SE., and

S 3 in SW. quadrant,

dig pits 18x18x12 ins. in each  
sec. - 5 1/2 ft. dist., raise a mound  
of earth 1 ft. base, 2 ft. high W.  
of cor.

The true course of this line is  
S 89° 47' W, and the distance is  
80.04 chs.

August 26, 1910

August, 29, 1910: For solar obser-  
vation see line bet. secs. 16 & 17  
book "D" of this survey.

From the cor of secs. 2, 3, 34 & 35  
heretofore described

From

West, retracing line bet. secs. 3 & 34  
fall 15 eks. N. of the 1/4 sec. cor.  
which is a greatly decayed  
post, 2 ins sq, 1 1/2 ft. long, lying  
on the ground, with marks  
nearly obliterated. I destroy all  
traces of the old cor. and re-esstab-  
lish it at the same point, as  
follows.

- 40.00

4

Retracement North Boundary, T.20 S.R.2 4 E.  
chains

Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for  $\frac{1}{4}$  sec cor. marked on brass cap.  $\frac{1}{4} S 34$  on N. half and S 3 on S half, dig pits  $18 \times 18 \times 12$  ins. E. + W. of post 3 ft. dist., and raise a mound of earth  $3\frac{1}{2}$  ft. base  $1\frac{1}{2}$  ft. high N. of cor.

From the  $\frac{1}{4}$  cor., I continue  
West

40.00 Fall 15 lks. N. of the cor. of secs. 3, 4, 33 + 34 which is decayed stake, 2 ins. sq. 1 ft. high. with marks nearly obliterated. I destroy all traces of the old cor. and re-establish it at the same point as follows:

Set an iron post, 3 ft. long, 3 ins. in dia, 24 ins. in the ground for cor. of secs. 3, 4, 33 & 34, marked on brass cap

$T 19 S R 24 E$  on N. half, and  
 $T 20 S$  on S half,

S 33 in NW.,

S 34 in NE.,

S 3 in SE +

S 4 in SW quadrant, dig pits  $18 \times 18 \times 12$  ins. in each sec. 5 ft. dist., and raise a mound of earth 1 ft. base, 2 ft. high W. of corner.

The true bearing of this line is S  $89^{\circ}47' W.$ , and the distance is 80.00 chs

West retracing line, bet. secs 4 + 33.

39.90 Fall 14 lks. N. of the  $\frac{1}{4}$  sec cor which is a decayed pine stake with marks nearly obliterated. I destroy all traces of the old cor.

chain Re-tracement north boundary T.20 S. R.24 E.

and re-establish it at the same point, as follows:

Set an iron post, 3 ft. long, 1 in. in dia., 26 ms. in the ground for  $\frac{1}{4}$  sec. cor. marked on brass cap,  $\frac{1}{4}$  S 33 on N. half and S 4 on S. half, dig pits  $18 \times 18 \times 12$  ms. E. & W. of post, 3 ft. dist., raise a mound of earth  $3\frac{1}{2}$  ft. base,  $1\frac{1}{2}$  ft. high N. of cor.

From the  $\frac{1}{4}$  cor. I continue West

3998

Fall 14 lbs. N. of the cor. of secs. 4, 5, 32 + 33, which is a pine stake 2 ms. sq., 1 ft. above ground, marked and witnessed as described by the surveyor general. I destroy all traces of the old cor., and re-establish it at the same point as follows.

Set an iron post, 3 ft. long, 3 ms. in dia., 24 ms. in the ground for cor. of secs. 4, 5, 32 + 33, marked on brass cap

T 19 S R 24 E on N. half

T 20 S on S. half,

S 32 in NW.,

S 33 in NE.,

S 4 in SE., and

S 5 in SW. quadrant,

dig pits  $18 \times 18 \times 12$  ms. in each sec.  $5\frac{1}{2}$  ft. dist., raise a mound of earth, 4 ft. base, 2 ft. high, W. of cor.

The true bearing of this line is S  $89^{\circ} 48' W.$ , and the distance is 699.88 chs

West, retracing line bet. secs. 5 + 32.

40.06

Fall 17. lbs. N. of the  $\frac{1}{4}$  sec. cor.

6.

Retracement north boundary T.20 S.R.24 E.  
chain

	which is a greatly decayed pine post, with marks about obliterated. I destroy all traces of the old cor and re-establish it at the same point as follows.
	Set an iron post, 3 ft. long, 3 in. in dia. 26 ins in the ground for $\frac{1}{4}$ sec. cor. marked on brass cap $\frac{1}{4} S 320 N$ . half and $S 50 S$ on S. half, dig pits $18 \times 18 \times 12$ ins. E. + W. of post 3 ft. dist., raise a mound of earth $3\frac{1}{2}$ ft. base $1\frac{1}{2}$ ft. high N. of cor.
	From the $\frac{1}{4} N$ continue West.
H.05	Take 17 lks. N. of the cor. of secs. 5, 6, 31 + 32 which is a decayed post, 2 ins. sq., $1\frac{1}{2}$ ft long, marked as described by the surveyor general. I destroy all traces of the old cor. and re-establish it at the same point as follows. Set an iron post, 3 ft. long, 3 in. in dia., 24 ins in the ground for cor. of secs. 5, 6, 31 + 32, marked on brass cap $T 19 S R 24 E$ on N half and $T 20 S$ on S half. $S 31$ in NW., $S 32$ in NE., $S 5$ in SE. and $S 6$ in SW. quadrant, dig pits $18 \times 18 \times 12$ ins. in each sec. $5\frac{1}{2}$ ft. dist., raise a mound of earth $4$ ft. base $2$ ft. high W. of cor. The true bearing of this line is $S 89^{\circ} 45' W.$ , and the distance is 80.11 chs.

West, retracing line bet. secs 6 + 31.

Retracement North boundary T. 20 S. R. 24 E.  
chain.

- 4.000 Fall 16 like N. of the  $\frac{1}{4}$  sec. cor. which is a decayed pine post, with marks, nearly obliterated. I destroy all traces of the old cor. and re-establish it at the same point as follows:  
Set an iron post, 3 ft. long, 1 in. in dia., 26 in. in the ground for  $\frac{1}{4}$  sec. cor. marked on brass cap 44S 31 on N. half and S 6 on S half, dig pits  $18 \times 18 \times 12$  ins. E. & W. of post 3 ft. dist., raise a mound of earth  $3\frac{1}{2}$  ft base  $1\frac{1}{2}$  ft. high N. of cor. From the  $\frac{1}{4}$  sec. cor. I continue West.
- 43.70 Fall 16 like N. of the cor. of tps. 19 + 20 S., Rs 23 + 24 E. which is an iron post, 3 ~~ins~~ in dia; 1 ft. above ground, firmly set. and marked and witnessed as described by the surveyor general.  
The true bearing of this line is S.  $89^{\circ} 46'$  W., and the distance is 83.70 chs.

August 29, 1910

Retracement west boundary, T 20 S., R 24 E.  
chains

- August 30, 1910: For solar observation  
see line bet. secs. 18 & 19 book "D"  
of this survey.
- From the cor. of secs. 7, 12, 13 & 18  
in the W. bdy of the tp., heretofore  
described
- True  
North, retracing line bet. secs 7 & 12
- 40.18 The  $\frac{1}{4}$  sec. cor. which is a pine  
post, 3 ms. sq. 16 ms. above ground,  
firmly set, and marked and  
witnessed as described by the  
surveyor general.
- 80.36 The cor. of secs. 1, 6, 7 & 12, here-  
tofore described  
The true bearing of this line is  
north and the distance is 80.36 chs
- 
- North, retracing line bet. secs. 1 & 6
- 40.11 The  $\frac{1}{4}$  sec. cor. which is a pine  
post, 3 ms. sq. 1 ft above ground,  
firmly set, and marked and  
witnessed as described by the  
surveyor general.  
From the  $\frac{1}{4}$  cor. I continue  
north
- 40.09 The cor. of tps. 19 & 20 S., R's 23 & 24  
East, heretofore described.  
The true bearing of this line is  
North and the distance is 80.20 chs
- August 30, 1910.  
For general description see book  
"D" of this survey

Howard C. Miller  
U. S. Instrumentman

Traverse of T<sup>3</sup> S. R<sup>24</sup> E.

Lines	Courses	Distances	Latitude	Departure
S. Body.			N. - S.	E. - W.

Sec 31	789° 56' E	40.02	.04	40.02
31	789° 57' E	40.05	.03	40.05
32	789° 59' E	40.02	.01	40.02
32	789° 56' E	40.16	.05	40.16
33	789° 51' E	40.12	.11	40.12
33	889° 59' E	39.94	.01	39.94
34	789° 56' E	39.98	.05	39.98
34	889° 59' E	40.43	.01	40.43
35	789° 57' E	40.25	.04	40.25
35	789° 59' E	40.05	.01	40.05
36	789° 57' E	40.06	.03	40.06
36	789° 56' E	40.14	.05	40.14
E 1/2 sec.	74° 20' E	39.98	39.87	3.07
36	North	40.02	40.02	
25	70° 13' E	40.00	40.00	.15
25	70° 14' N	40.00	40.00	
24	North	50.00	50.00	.16
13	70° 03' E	40.00	40.00	
13	70° 15' N	40.00	40.00	.06
12	70° 03' E	40.44	40.44	
12	North	40.19	40.19	
11	North	40.20	40.20	
11	70° 04' E	42.17	42.17	.06
n. body.				
1	889° 47' N	79.92	:30	79.92
2	889° 47' N	80.04	:30	80.04
3	889° 47' N	80.00	:30	80.00
4	889° 48' N	79.88	:28	79.88
5	889° 45' N	80.11	:35	80.11
6	889° 46' N	83.70	:33	83.70
7	South	80.20	80.20	
7	South	80.36	80.36	
sec 18, 19				
30 + 31	South	320.00	320.00	

Convergence

483.3	482.44	484.52	484.46
482.44		484.46	

Errors

.87	
-----	--

.06

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## FINAL OATHS OF DEPUTY SURVEYOR AND HIS ASSISTANTS.

## LIST OF NAMES.

A list of the names of the individuals employed by Howard W. Miller  
Instrumentman, United States Deputy Surveyor, to assist in running, measuring, and  
marking the lines and corners described in the foregoing field notes of the survey of the retracement of the north & west boundaries of Twp S.R. 24 E.  
S.L.B. & D., Utah. showing the respective capacities in which they acted:

Fred Wright, Chairman.  
Karl Rothermund, Chairman.  
Roscoe C. Hallett, Moundman.  
, Moundman.  
, Axman.  
, Axman.  
Ben Egle, Flagman.

## FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted Howard W. Miller  
Instrumentman, United States Deputy Surveyor, in surveying all  
those parts or portions of the retracement of the north & west boundaries of Township no. 20 South Range no 24 East  
of the Salt

Lake Base of meridian, State of Utah, which are represented  
in the foregoing field notes as having been surveyed by him and under his direction; and that said survey  
has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the  
corner monuments established, according to the instructions furnished by the United States Surveyor  
General for Utah.

Fred Wright, Chairman.  
Karl Rothermund, Chairman.  
Roscoe C. Hallett, Moundman.  
, Moundman.  
, Axman.  
, Axman.  
Ben Egle, Flagman.

Subscribed and sworn to before me this 30<sup>th</sup> day of August, 1910 }



Howard W. Miller  
U.S. Instrumentman

## FINAL OATH OF UNITED STATES DEPUTY SURVEYOR.

I, \_\_\_\_\_, United States Deputy Surveyor, do solemnly swear that, in pursuance of a contract received from \_\_\_\_\_, bearing date of the United States Surveyor General for \_\_\_\_\_, day of \_\_\_\_\_, 190\_\_\_\_\_, I have well, faithfully, and truly, in my own proper person, and in strict conformity with the instructions furnished by the United States Surveyor General for \_\_\_\_\_, the Manual of Surveying Instructions, and the laws of the United States, surveyed all those parts or portions of \_\_\_\_\_.

For final oath of transitman see book "Y" T.25 S., R. 26 E.

..... of the: \_\_\_\_\_  
 meridian, in the \_\_\_\_\_ of \_\_\_\_\_, which are represented in the foregoing field notes as having been surveyed by me, and under my direction; and I do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the Manual of Surveying Instructions, and the special written instructions of the United States Surveyor General for \_\_\_\_\_ and in the specific manner described in the field notes, and that the foregoing are the original field notes of such survey.

United States Deputy Surveyor.

Subscribed by said \_\_\_\_\_, and sworn to before me }  
 this \_\_\_\_\_ day of \_\_\_\_\_, 190\_\_\_\_\_ }



## APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Salt Lake City, Utah, June 25, 1913

The foregoing field notes of the survey of retrace of the North and West Boundaries of Township No. 20 South, Range No. 24 East of the Salt Lake Base and Meridian, Utah,

executed by Howard W. Miller  
 special instructions \_\_\_\_\_  
 under his contract No. \_\_\_\_\_, dated August 6, 1910, 1910, having been  
 critically examined, and the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

United States Surveyor General

I certify that the foregoing transcript of the field notes of the above-described surveys in \_\_\_\_\_, has been correctly copied from the original notes on file in this office.

United States Surveyor General

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Page**

4-679.

BOOK A-378

Book D.

FILED

FEB 24 1911

# FIELD NOTES.

X. S. B.

OF THE SURVEY OF THE

Subdivisions of T. 20 S., R. 24 E.

of the Salt Lake Base and Meridian, Utah

AS SURVEYED BY

Howard W. Miller

*Transitman*  
United States Deputy Surveyor

assignment, Group  
Under his ~~Contract~~ No. 4, Utah, dated August 6, 1900

Survey commenced August 22, 1900

Survey completed August 30, 1900

6-161

## NAMES AND DUTIES OF ASSISTANTS.

Fred Wright, chairman

Karl Rothermund, chairman

Roscoe Hallett, moundsman

Ben Egle, flagman

## BOOK A-378

## INDEX DIAGRAM.

Township 20 South, Range 24 East.

6	5	4	5	40	4	31	8	22	2	12	1
53	52			40		30		21		11	
7	51	8	39	0	30	10	90	11	10	12	
51	50			38		29		19		9	
18	49	17	38	10	28	16	19	14	8	13	
48	48			37		27		18		7	
10	47	20	36	21	27	22	17	28	6	24	
46	45			35		26		16		5	
30	44	20	34	28	25	27	15	20	4	25	
43	42			33		24		15		3	
31	41	32	32	23	23	24	13	16	2	20	

Meanders Page.....

## PRELIMINARY OATHS OF ASSISTANTS.

We, Fred Wrightand Karl Rothermund

do solemnly swear that we will well and faithfully execute the duties of chainmen; that we will level the chain upon even and uneven ground, and plumb the tally pins, either by sticking or dropping the same; that we will report the true distances to all notable objects, and the true lengths of all lines that we assist in measuring, to the best of our skill and ability, and in accordance with instructions given us, in the survey

the subdivisions of T. 20 S. R. 24 E. S. L. B. & M., Utah

Fred Wright

Chainman

Karl Rothermund

Chainman

Subscribed and sworn to before me this 22<sup>nd</sup>day of August, 1900}

I,

We, Roscoe HallettHoward Wm Miller

U. S. Instrumentman

do solemnly swear that we will well and truly perform the duties of moundman in the establishment of corners, according to the instructions given us to the best of our skill and ability, in the survey

the subdivisions of T. 20 S. R. 24 E. S. L. B. & M., Utah

Roscoe Hallett

Moundman

, Moundman

Subscribed and sworn to before me this 22<sup>nd</sup>day of August, 1900}

We,

Howard Wm Miller

U. S. Instrumentman

do solemnly swear that we will well and truly perform the duties of axmen in the establishment of corners and other duties, according to instructions given us, to the best of our skill and ability, in the survey

, Axmen

, Axmen

Subscribed and sworn to before me this 22<sup>nd</sup>day of August, 1900}

I,

Ben Eagle

, do solemnly swear that I will well and try

perform the duties of flagman according to instructions given me, to the best of my skill and ability, in the survey of the subdivisions of T. 20 S. R. 24 E., S. L. B. & M., Utah.

Ben Eagle

Flagman

Subscribed and sworn to before me this 22<sup>nd</sup>day of August, 1900}Howard Wm Miller

U. S. Instrumentman

## Subdivision of T. 20 S., R. 24 E.

Chanc.

Survey commenced August 22, 1910, and executed with a W. & L. E. Gurley solar compass. For description and test of instrument see book "A" of this survey.

At the standard cor. of secs. 35 and 36 on the south bdy. of the tp, lat.  $39^{\circ} 01' 42'' N.$ , longitude  $109^{\circ} 14' 19'' W.$ , I set off  $39^{\circ} 01' 42'' N.$ , on the latitude arc;  $11^{\circ} 51\frac{1}{2}' N.$ , on the decl. arc; and at  $5^h\ 6^m\ p.m.\ l.m.t.$ , determine with the solar a meridian and mark a point thereof, on a stone firmly set in the ground, 5 chs. N. of my station.

At  $9^h\ 30^m\ p.m.\ l.m.t.$ , by my watch I observe Polaris at eastern elongation in accordance with the Manual of Instructions, and mark a point in the line thus determined, on a peg driven in the ground, 5 chs N. of my station.

August 22, 1910

August 23: At  $6^h\ 30^m\ a.m.\ l.m.t.$ , I lay off the azimuth of Polaris,  $1^{\circ} 30'$  to the west and find that this meridian agrees with the solar meridian determined August 22. At  $7^h\ 06^m\ a.m.\ l.m.t.$ , I set off  $39^{\circ} 01' 42'' N.$  on the lat. arc;  $11^{\circ} 39' 37'' N.$ , on the decl. arc; and determine a meridian with the solar. This meridian also agrees with the Polaris meridian. I therefore conclude that the adjustments of the instrument are satisfactory.

The magnetic bearing of the true meridian at  $7^h\ 15^m\ a.m.$  is  $16^{\circ} 35' W.$ , the angle thus determined

## Subdivision of T. 20 S., R. 24 E.

Chances.	gives the magnetic declination $16^{\circ} 35' E.$
	Part of the east bdy. of this tp. being out of alignment, I run a sectional guide meridian as follows:
	I commence at the standard cor. of secs. 35 and 36 on the south bdy. of the tp. heretofore described. Hence I run
	North, bet. secs. 35 and 36 over rolling land through scattering undergrowth of shadscale.
	Note: from this sec. cor. George Canfields house bears $N. 25^{\circ} 38' W.$
24.00	Wagon road from Marrs, Utah to Westwater, Utah, bears $7.60^{\circ} E \pm S. 60^{\circ} W.$
27.70	George Canfields house bears $S. 12^{\circ} 37' W.$
40.00	Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for $\frac{1}{4}$ sec. cor., marked on brass cap $\frac{1}{4} S. 35'$ on W. half and $S. 36$ on E. half, dig pits $18 \times 18 \times 12$ ins., N. & S. by post 3 ft. dist., raise a mound of earth $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high W. by cor.
41.00	Telegraph line bears $N. 40^{\circ} E$ and $S. 40^{\circ} W.$
42.05	Center of Denver and Rio Grande rail road track bears $N. 40^{\circ} E \pm S. 40^{\circ} W.$ The $49\frac{1}{2}$ mile post bears $N. 38^{\circ} 19' E$ , about 10 chs. distant
	Mohrs cabin bears $N. 28^{\circ} 50' W.$
	Begin ascent towards mesa.
47.30	Road, bears NE. and SW.
50.00	Mohrs house bears West.
60.00	Base of mesa, bears E. and W. Hence up steep rocky ascent over land sloping nearly south.

## Subdivisions T 20 S R 24 E.

chains 78.00	Top of ridge and mesa, 350 ft. above base bears West's N.
80.00	Set an iron post, 3 ft. long, 2 in. dia., 26 ins in the ground, for cor. of secs. 25, 26, 30 & 36, mkd. on brass cap  T 20 S S 26 in NW, R 24 E S 25 in NE, S 36 in SE, and S 35 in SW quadrant, and raise a mound of stone 2 ft. base, 1 1/2 ft. high W. of cor. It is impracticable Land rolling and mountainous Soil: rich sandy loam on first 60 chs; rocky on last 20 chs. 1 <sup>st</sup> & 4 <sup>th</sup> rates Undergrowth, Chadscale, 6 to 12 ins high No timber
140.00	N 89° 56' E on a random line bet. secs 25 & 36.
83.12	Set temp. 1/4 sec cor. Intersect E. bdy of the Tpl 10 like N of the cor. bdy. secs. 25, 30, 31 & 36 heretofore described. Hence thence
15.00	West, on a true line bet. secs. 25 & 36. Over mountainous land. Ascend eastern slope of ridge. Ridge, 75 ft. above sec. cor. beds N 20° E & S 20° W
142.12	Wint. house bears N 41° 44' E Hence over gently rolling land Road, Manz. Utah to West- water Utah bears S. & N 10° E
143.12	Set an iron post, 3 ft. long, 1 in. in dia., 26 ins in the ground, for 1/4 sec. cor. mkd. on brass cap 1/4 S 25 on N. half and S 36 on

N 89° 56' E on a random line  
bet. secs 25 & 36.  
Set temp. 1/4 sec cor.  
Intersect E. bdy of the Tpl 10 like  
N of the cor. bdy. secs. 25, 30, 31 &  
36 heretofore described.  
Hence thence  
West, on a true line bet. secs. 25 & 36.  
Over mountainous land.  
Ascend eastern slope of ridge.  
Ridge, 75 ft. above sec. cor. beds  
N 20° E & S 20° W  
Wint. house bears N 41° 44' E  
Hence over gently rolling land  
Road, Manz. Utah to West-  
water Utah bears S. & N 10° E  
Set an iron post, 3 ft. long, 1 in. in  
dia., 26 ins in the ground, for  
1/4 sec. cor. mkd. on brass cap  
1/4 S 25 on N. half and S 36 on

# Subdivision of T. 20 S., R. 24 E.

chain	S. half, dig pits, 18 x 18 x 12 ins. E. and W. of post 3 ft. dist., and raise a mound of earth 3½ ft. base 1½ ft. high N. of cor.
50.22	Telegraph line, bears $N 40^{\circ} 02' E$ & $S 40^{\circ} 02' W$ <small>Top of rocky bank <math>N 15^{\circ} E</math>.</small>
51.17	Center of Denver & Rio Grande Railroad track bears $N 40^{\circ} 02' E$ & $S 40^{\circ} 02' W$
69.75	Road, bears $N 10^{\circ} E$ & $S 10^{\circ} W$
73.15	Base of mesa, bears N. & S. Hence up steep rocky asc't 350 ft.
83.12	Intersect the cor. of secs. 25, 26, 35 & 36.  Land rolling & mountainous. Soil; E. 12 chs. mountainous E. slope: soil, rocky, subsoil, gravelly; undergrowth, greasewood. Next 61 chs. rolling brush land, rich sandy loam, good bunch grass. Sub-soil sand loam. W. 10 chs. mountainous rocky soil, sub-soil adobe. No grass or undergrowth. No timber

North, on sectional Guide Meridian, bet. secs. 25 & 26.

Over mountainous land, along E slope of high mesa ridge.

20.00	Begin steep descent over N.E. slope.
33.50	Base of mesa, 200 ft below top, bears NW and SP.
36.00	Begin ascent of S. face of ridge, bears NW & S 80° E.
40.00	Set an iron post, 3 ft. long, 1 in. dia., 26 ins. in the ground, for $\frac{1}{4}$ sec. cor. marked on brass cap $\frac{1}{4}$ S 26 on W. half and S 25 on E. half. and raise a mound of stones, 2 ft. base, 1½ ft. high. W. of cor. Pits impracticable
45.00	Top of ridge, 50 ft above $\frac{1}{4}$ sec. cor. bears E. & W. Hence over broken hilly land.
50.00	Set an iron post, 3 ft. long, 2 ins. in

Subdivisions of T. 20 S., R. 24 E.

dia, 24 ms in the ground for cor. of secs. 23, 24, 25 and 26, marked on brass cap  
 T 20 S S 23 in NW,  
 R 24 E S 24 in NE,  
 S 25 in SE and  
 S 26 in SW quadrant,  
 dig pits, 18 x 18 x 12 ms in each sec. 5 $\frac{1}{2}$  ft. dist., and raise a mound of earth 4 ft. base, 2 ft. high W. of cor.  
 Land: mountainous  
 Soil: S. 70 chs. rocky, no grass or undergrowth; subsoil rocky + adobe N. 10 chs gradual NE slope, clay soil, some bunch grass; subsoil clay, very dry + hard. No timber

East, on a random line bet. secs.

24 + 25

14.00 Set temp. 1/4 sec. cor.

83.09 Intersect the East. bdy. of the tr. at the cor of secs 19, 24, 25 + 30 heretofore described

Hence I run

West, on true line bet. secs. 24 + 25  
 Over nearly level land sloping. SW.

0.65 Road, Mars, Utah to Westwater, Utah  
 bears NE + SW

13.85 Telegraph line, bears  $75^{\circ}54'E$  +  $S50^{\circ}54'W$ .

14.70 Center of Denver + Rio Grande, rail road track on bridge over Cottonwood wash, bears  $75^{\circ}54'E$  +  $S50^{\circ}54'W$ . Wash course  $S40^{\circ}E$

Hence across cottonwood wash, some water.

18.50 Right bank wash, course East.

Hence thru high greasewood undergrowth.

31.00 Indian hoe, bears S. 5 chs.

31.50 Began to ascend

## Subdivisions of T. 20 S., R. 24 E.

chains	
36.90	Road, bears N.W. & S.E.
37.60	Irrigation ditch, 5 lks. wide, course S.E.
43.09	Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground, for $\frac{1}{4}$ sec. cor. marked on brass caps $\frac{1}{4}S\ 24$ on N. half and S 25 on S. half, dig pits $18 \times 18 \times 12$ ins. E. & W. of post 3 ft. dist.; and raise a mound of earth, $3\frac{1}{2}$ ft. base $1\frac{1}{2}$ ft. high N. of cor. S. V. Leonard's house bears $71^{\circ}53'35''W$
46.65	Irrigation ditch, 5 lks. wide course N.
49.65	Road bears $71^{\circ}20'W + S 20'E$
49.95	Same ditch, course S $85^{\circ}E$ .
54.00	Low ridge, bears N & S. Leonard's house bears N.
56.30	Same ditch, course N.
68.60	" " S.E.
83.09	Intersect the cor. of secs. 23, 24, 25 & 26 Land rolling. Soil, on 83.09 chs. clay, S.E. slope on E. 13. chs. N. slope W 70.00 chs. subsoil clay, very dry and hard. some undergrowth of greasewood No timber
14.60	North, on sectional Guide Meridian, bet. secs. 23 & 24 Gradually descend over nearly level land.
28.00	Wash, 20 lks. wide, 10 ft. deep, course East. Ass. rocky S.E. slope ridge. Ridge, 100 ft. above wash, bears N.E. & S.W.
40.00	Gradually descend. Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground, for $\frac{1}{4}$ sec. cor. marked on brass caps $\frac{1}{4}S\ 23$ on W. half and S 24 on E. half; and raise a mound

## Subdivisions of T. 20 S., R. 24 E.

chains

of stone, 2 ft. base,  $1\frac{1}{2}$  ft. high W. of cor. Pits impracticable.

August 23: At this  $\frac{1}{4}$  sec. cor. I set off  $11^{\circ}34'44''$  N. on the decl. arc; and at  $12^{\text{h}}3^{\text{m}}$  J. m. l.m.t observe the sun on the meridian; the resulting lat. is  $39^{\circ}04'$

80.00 Set an iron post, 3 ft. long, 2 ins. in dia. 24 ins. in the ground, for cor. of secs. 13, 14, 23 & 24, marked on brass cap.

T 20 S S 14 in NW.,

R 24 E S 13 in NE.,

S 24 in SE. and

S 23 in SW. quadrant,

dig pits  $18 \times 18 \times 12$  ins. in each sec.  $5\frac{1}{2}$  ft. dist., and raise a mound of earth 4 ft. base, 2 ft. high W. of cor.

Gated gently rolling & mountainous soil: 8 1/4 chs. gently rolling N. slope, clay soil, some grass: sub-soil, clay, very dry & hard. Next 13.44 chs. steep mountainous SE. slope rocky soil, no undergrowth. sub-soil, rocky. N. 5 1/2 chs. gently rolling bench, N. slope, rocky soil, some undergrowth of shale scale, sub-soil, hard dry clay. No timber

East, on a random line bet.

secs. 13 & 24

40.00 Set. temp.  $\frac{1}{4}$  sec. cor.

83.13 Intersect the E. bdy of the tp at the cor. of secs. 13, 18, 19 & 24, heretofore described.

Hence I run

West, on true line bet. secs. 13 & 24 over broken hilly land. descended rocky W. slope of ridge

13.15 Wash - 20 lks. wide, coarse S.

## Subdivisions, T. 20 S., R. 24 E.

chain	Ascend.
17.00	Spur, projects S. Greece along rocky S. side of bench
29.35	Wash and base of ridge, coarse S10E Asc. 50 ft.
36.15	more gradual ascent
37.15	Ridge, N. + S. descend Enter a few scattering cedar.
43.13	Set an iron post, 3 ft. long, 1 in. in dia., 26 lbs in the ground and mound of stone, for $\frac{1}{4}$ sec. cor. marked on brass cap $\frac{1}{4}$ S13 on N. half and S24 on S. half; and raise a mound of stone, 2 ft. base $1\frac{1}{2}$ ft. high. N. of cor. Pits impracticable
43.95	Hollow, drains S., ascend
47.85	Ridge bears, N + S. descend towards Cottonwood wash
65.45	left bank cottonwood wash, coarse S20E
66.90	Right " " " " The cottonwood dam, bears SE. about 10 chs.
80.13	Gradually ascend. Low ridge bears N + S.
83.13	Intersect the cor. of secs. 13, 14, 23 + 24. Land, broken hills. Soil, E 65.45 chs. rocky SW. slope rocky soil, sub soil rocky. no undergrowth, some scrub cedar.
E 18.00 chs. gradual. SE slope, clay soil with some rocks. Sub soil rocky. Short chadscale under- growth	
31.00	North, on Sectional Guide Meridian bet. secs. 13 + 14 over gently rolling land, grad- ually descending Enter greasewood undergrowth 2 to 4 ft. high, bears E & W
34.00	Right bank cottonwood wash, coarse SE

Subdivisions of T 20 S, R 24 E.

August 25.

East, on a random line bet. secs 12+13

Subdivisions of T. 20 S R. 24 E.

chains

4000	Set temp. $\frac{1}{4}$ sec. cor.
83.09	Intersect the E. bdy of the tp. at the cor. of secs. 7, 12, 13 and 18. <del>with no divide</del> Hence turn West, on true line. bet. secs. 12 & 13. Gradually descend over hilly land sloping W. thru scattering forest of cedar & pinon.
143.09	Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for $\frac{1}{4}$ sec. cor. mkd. on brass cap $\frac{1}{4}$ S 12 on N. half and S 13 on S half; and raise a mound of stone 2 ft. base, $1\frac{1}{2}$ ft. high N. of cor.
	Post impracticable. Leave cedar & pinon, bears E. & W.
144.50	Wash, 10 lks. wide, course SW Hence over land sloping S.
75.10	Spur, projects S. 3 chs. descend
79.60	wash, course SE. Enter creek bottom.
83.09	The cor. of secs 11, 12, 13 & 14. Land, hilly. Soil. E. 43. chs. hilly land with western slope. soil rocky, sub-soil, very hard clay. Some cedar & pinon timber of no value. Very little grass. W 40. chs. hilly land with S. slope. Soil. clay: subsoil very hard clay. No grass.

August 25, 1910

- 
- North, on Sectional Guide Meridian, bet. secs. 11 & 12  
over level creek bottom.
- 3.50 Wash, course SE. ascend from creek bottom.
- 5.00 Spur, projects W. descend 50 ft.
- 7.15 Wash, course SW. ascend
- 9.20 Ridge, bears E. & W.  
Gradually descend over nearly

## Subdivisions of T. 20 S., R. 24 E.

chains

	level land
40.00	Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground, for $\frac{1}{4}$ sec. cor. marked on brass cap $\frac{1}{4}$ S 11° W. half and S 12° on E. half; dig pits $18 \times 18 \times 12$ ins. N. & S. of post 3 ft. dist., and raise a mound of earth $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high W. of cor.
55.75	Wash, coarse SW.
80.00	Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in the ground for cor. of secs. 1, 2, 11 & 12, marked on brass cap T 20 S S 2 in NW., R 24 E S 1 in NE., S 12 in SE. and S 11 in SW. quadrant, dig pits $18 \times 18 \times 12$ ins. in each sec. $5\frac{1}{2}$ ft. dist., and raise a mound of earth 4 ft. base, 2 ft. high NW of cor. Flat, gently rolling & hilly. Soil: S 3.50 chs. rich sandy loam. with greasewood undergrowth, sub. soil sandy loam. Next 5.70 chs hilly land sloping almost W. soil gravelly, subsoil clay, very hard and dry. No grass. N 70.80 chs gently rolling land S. slope. soil clay. sub-soil clay very hard. No grass no timber

August 26, 1910

East on a random line bet. secs

1 &amp; 12

40.00	Set temp. $\frac{1}{4}$ sec cor.
82.95	Intersect the Ebdg. of the top. talks. S. of the cor. of secs. 1 & 12 here-to fore described Hence I run

Claims

## Subdivisions of T. 20 S., R. 24 E.

	S. 89° 58' W., on true line bet. secs. 1 + 12. Over hilly land sloping S. Ridge, bears N + S. Hence gradually descend over land sloping almost W.
34.95	Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for $\frac{1}{4}$ sec. cor. marked on brass cap $\frac{1}{4} S 1$ on N. half and $S \frac{1}{2}$ on S half; dig pits $18 \times 18 \times 12$ ins. E + W. of post 3 ft. dist. and raise a mound of earth $3\frac{1}{2}$ ft. base $1\frac{1}{2}$ ft. high N. of cor.
42.95	Wash, coarse S.
74.95	Wash, coarse $S \frac{1}{2} W$
76.15	Intersect cor. of secs. 1, 2, 11 + 12.
82.95	Land, hilly & gently rolling. Soil: E. 35 chs. Hilly land with a S. slope. soil, clay, sub-soil, clay, very hard & dry. Some grass. W. 48 chs. gently rolling W. slope. sandy loam soil, sub-soil. clay, very hard & dry. good grass. No timber.
	August 26, 1910
40.00	Knowing that closing corners will be necessary on the N. bdy. of the tp. I run North, on Sectional Guide Meridian bet. secs 1 + 2 Over nearly level land, grad- ually ascending Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for $\frac{1}{4}$ sec. cor. marked on brass cap $\frac{1}{4} S 2$ on W. half, and $S 1$ on E. half, dig pits $18 \times 18 \times 12$ ins. N. + S. of post, 3 ft. dist., and raise a mound of earth $3\frac{1}{2}$ ft. base $1\frac{1}{2}$ ft. high W. of cor.
82.80	Intersect N. bdy. of the tp. 3.03 chs.

## Subdivisions of T. 20 S., R. 24 E.

S $89^{\circ}47'W$ . of the cor. of secs. 1, 2,  
35 + 36 heretofore described.  
Set an iron post, 3 ft. long, 2 ins.  
in dia., 2 $\frac{1}{4}$  ins. in the ground  
for closing cor. of secs. 1 + 2  
marked on brass cap  
TCT 19 S R 24 E S 35 S 36 in N. half  
S 1 in SE. and  
S 2 in SW quadrant, dig pits  
24 x 18 x 12 ins. crosswise on each  
line, E. + W. 3 ft., and S of post  
7 ft. dist., and raise a mound  
of earth 4 ft. base 2 ft. high S.  
of cor.  
Land gently rolling.  
Soil: on entire line rich sandy loam  
sub soil, clay, very hard. Some  
grass. No timber.  
destroy all marks on old cor. pertaining to secs 1 + 2.  
August 23, 1910

August 24: at 7 $\frac{1}{2}$  a.m. l.m.t.  
I set off  $39^{\circ}01'42''N$ . on the lat. arc;  
 $11^{\circ}18\frac{1}{2}'W$ . on the decl. arc and  
determine a meridian with  
the solar at the standard cor.  
of secs. 34 + 35 on the S. bdy of  
the sp. heretofore described.  
Hence I run

$N^{\circ}01'W$ , bet secs. 34 + 35

Over nearly level land

1.20 Road bears  $N65^{\circ}E$  &  $S65^{\circ}W$

1.50 Telegraph line bears  $N66^{\circ}47'E$  &  $S66^{\circ}47'W$ .

2.50 Center of Denver + Rio Grande rail-  
road track bears  $N66^{\circ}47'E$  &  $S66^{\circ}47'W$ .

2.80 Road, bears  $N68^{\circ}E$  &  $S60^{\circ}W$ .

2.90 Road, bears N.E. + S.W.

2.8.30 W. A. Shidlers house bears  $S81^{\circ}19'E$ ,  
12 chs.

W. Squires house bears  $S22^{\circ}40'W$   
15.50 chs.

Subdivisions of T. 20 S., R. 24 E.  
Claim

- 40.00 Set an iron post, 3 ft long, 1 in. in dia., 26 ins. in the ground for 1/4 sec. cor. marked on brass cap 1/4 S 34 on W. half and S 35 on E half. dig pits 18x18x12 ins. N. + S. of post 3 ft. dist. and raise a mound of earth 3 1/2 ft. base, 1 1/2 ft. high W. of cor.
- 48.00 Base of mesa bears NE. + SW. Hence up steep rocky ascent.
- 61.25 Top of mountain 325 ft. above base, bears SW + N 80° E.  
A spring of good water bears S 74° 30' E., 15 chs. dist.  
Gradually descend land sloping N.
- 80.00 Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in the ground for cor. of secs. 26, 27, 34 + 35, marked on brass cap  
 T 20 S S 27 in NW,  
 R 24 E S 26 in NE,  
 S 35 in SE. and  
 S 34 in SW. quadrant,  
 dig pits. 18x18x12 ins. in each sec. 5 1/2 ft. dist., and raise a mound of earth 4 ft. base 2 ft. high W. of cor.  
 Land gently rolling + mountainous  
 Soil: S 48 chs. gently rolling S slope  
 sandy loam soil, good grass.  
 Sub. soil sandy loam. No undergrowth  
 Next 13.25 chs. steep mountainous  
 SE. slope. soil rocky, sub. soil rocky.  
 No grass or undergrowth N. 28.75  
 chs. gently rolling N. slope. rocky  
 soil with some undergrowth of  
 Chadscale. Sub. soil a very hard  
 clay. No timber.

N 89° 58' E., on a random line

## Subdivisions of T. 20 S., R. 24 E.

Claims

	bet. secs. 26 & 35 Set. temp $\frac{1}{4}$ sec. cor. Intersect N. & S. line at the cor. of secs. 25, 26, 35 and 36 Hence I run $S 89^{\circ} 58' W.$ On true line bet. secs. 26 & 35 Over rolling land sloping N.E. Ridge & top of mesa bears N. & SW. Wash, 20 ft. wide, coarse N. Low ridge, bears $N 20^{\circ} E.$ & S. Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for $\frac{1}{4}$ sec. cor. marked on brass cap $\frac{1}{4} S 26$ on N. half and $S 35$ on S half; and raise a mound of stone 2 ft. base, $1\frac{1}{2}$ ft high N. of cor. It's impracticable wash, coarse $N 10^{\circ} W.$
40.00	
80.30	
0.80	
20.60	
24.65	
40.15	
54.15	
80.30	
17.70	No $0^{\circ} 1' W.$ bet. secs. 26 & 27 Over gently rolling land, grad- ually descending. Wash course SW.
39.00	Wash, coarse SE.
40.00	Set an iron post, 3 ft. long, 1 in in dia., 26 ins in the ground for $\frac{1}{4}$ sec. cor. marked on brass cap $\frac{1}{4} S 27$ on W. half and $S 26$ on E. half., dig pits $18 \times 18 \times 12$ ins. N. & S. of post 3 ft. dist., and

Subdivisions of T. 20 S., R. 24 E.

claims

		raise a mound of earth 3½ ft. base, 1½ ft. high W. of cor.
58.40		Wash, coarse East Begin to ascend.
8.000		On top of a low ridge, bears N.E. & S.W. Set an iron post, 3 ft. long, 2 in. in dia., 24 in. in the ground for cor. of secs. 22, 23, 26 & 27, mkd. on brass cap. T 20 S S 22 in NW., R 24 E S 23 in NE., S 26 in SE. and S 27 in SW. quadrant, dig pits 18 x 18 x 12 in. in each sec., 5½ ft. dist., and raise a mound of earth 4 ft. base, 2 ft. high W. of cor. land, gently rolling. Soil: S 78 chs. gently rolling N. slope. soil, clay: some grass. Sub-soil very hard clay. N. 62 chs. E. slope soil clay. very little grass or undergrowth. Sub-soil a very hard, dry, clay. No timber
		N. 89° 58' E., on a random line bet. secs. 23 & 26
40.00		Set temp. ¼ sec. cor.
80.00		Intersect N. & S. line 5 lks N. of the cor. of secs. 23, 24, 25 & 26.
		Hence I run
		West, on tree line bet. secs. 23 & 26
		Ascend east slope of low ridge
17.00		Low ridge, bears N. & S. Descend.
28.75		Wash, coarse N. 20° E. asc 75 ft to
31.00		Ridge, bears N. & S. Gradually descend.
40.14		Set an iron post, 3 ft. long, 1 in. in dia., 26 in. in the ground for

Subdivisions of T. 20 S. R. 24 E.

claims

		$\frac{1}{4}$ sec. cor. marked on brass cap $\frac{1}{4}$ S. 23 on N. half and S. 26 on S. half, dig pits $18 \times 18 \times 12$ ins. E. & W. of post, 3 ft. dist., and raise a mound of earth $3\frac{1}{2}$ ft base, $1\frac{1}{2}$ ft. high W. of cor. Wash, 10 eks wide, course N. 10° E. The cor. of secs 22, 23, 26 & 27. Land, gently rolling & mountainous Soil: E 48 chs. mountainous land with northerly drain. Soil clay & rocky. very little undergrowth Sub-soil very hard dry clay No timber.
41.15		N. 0° 0' W., bet. secs. 22 & 23. Descend over rolling land, sloping NW.
80.28		Wash, course NE. ascend Ridge, bears. NE & SW. Descend into hollow
10.50		Wash and hollow, course NE.
22.00		On top of low spur. Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for $\frac{1}{4}$ sec. cor. marked on brass cap
36.00		$\frac{1}{4}$ S. 22 on W. half and S. 23 on E. half. dig pits $18 \times 18 \times 12$ ins. N. and S. of post 3 ft. dist., and raise a mound of earth $3\frac{1}{2}$ ft. base $1\frac{1}{2}$ ft high W. of cor.
40.00		Wash, course N. 10° E. Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in the ground for cor. of secs. 14, 15, 22 & 23, marked on brass cap
47.35		T. 20 S. 5° 15' in NW., R. 24 E. S. 14 in NE., S. 23 in SE. and S. 22 in SW. quadrant, dig pits $18 \times 18 \times 12$ ins. in each
80.00		

Subdivisions of T. 20 S. R. 24 E.  
Chano.

sec. 5  $\frac{1}{2}$  ft. dist.; and raise a  
round of earth 4 ft. base 2 ft.  
high W. of cor.  
Land, hilly & nearly level.  
Soil: S. 47 chs. hilly land draining  
N.E. soil, gravelly, some grass  
sub-soil, poor loam. N. 33 chs.  
nearly level land, south slope  
clay soil, no undergrowth or  
grass, sub-soil, very hard clay  
No timber

August 24-1910

August 25: For solar observation -  
see line bet. secs. 32 & 33, page. 32  
. East, on a random line bet.  
secs. 14 + 23.

40.00 Set. temp  $\frac{1}{4}$  sec. cor.  
80.30 Intersect N. & S. line. 5 lks. S. of  
the cor. of secs 13, 14, 23 & 24

Three Trms.  
S  $89^{\circ} 58'$  W., on true line bet secs. 14 & 23.  
Gradually ascending over rolling  
land.

40.00 Low ridge bears N. & S.  
40.15 Set an iron post 3 ft. long, 1 in. in  
dia., 26 ins. in the ground for  
 $\frac{1}{4}$  sec. cor. mkd. on brass  
cap  $\frac{1}{4}$  S 14 on N. half and S.  
 $\frac{1}{3}$  on S. half; dig pits  $18 \times 18 \times 12$  ins.  
E. + W. of post 3 ft. dist; and  
raise a round of earth  $3\frac{1}{2}$  ft  
base,  $1\frac{1}{2}$  ft high N. of cor.

80.30 The cor. of secs. 14, 15, 22 & 23.  
Land, rolling.

Soil: E 40.15 chs. rolling E. slope  
some grass. Sandy loam soil,  
sub-soil, hard, dry, clay. W. 40.15  
chs. rolling W. slope. good sandy  
loam soil, sub-soil, clay. No

## Subdivisions of T.20 S. R.24 E.

chains

undergrowth or timber on mile

N. 0°01' W., bet. secs. 14 & 15

Over nearly level land

40.00 Set an iron post, 3 ft. long, 1 in. in dia., 26 ins in the ground for  $\frac{1}{4}$  sec. cor. marked on brass cap  $\frac{1}{4} S 15$  on W. half and  $S 14$  on E. half; dig pits  $18 \times 18 \times 12$  ins N. & S. of post 3 ft. dist. and raise a mound of earth  $3\frac{1}{2}$  ft. base,  $1\frac{1}{2}$  ft. high W. of cor.

45.20 Wash, 10 ft. deep, 10 lks. wide, coarse E.

80.00 Set an iron post 3 ft. long, 2 ins in dia., 24 ins in the ground for cor. of secs. 10, 11, 14 & 15, marked on brass cap

T 20 S 5 10 ins NW,

R 24 E S 11 ins NE.,

S 14 ins SE. and

S 15 ins SW. quadrant.

dig pits  $18 \times 18 \times 12$  ins. in each sec.  $5\frac{1}{2}$  ft. dist. and raise a mound of earth  $4$  ft. base 2 ft. high W. of cor.

Land, nearly level.

Soil: on 80 chd very gradual S slope, no grass or undergrowth, soil sandy loam, sub-soil very hard dry clay. No timber

789°58' E., on a random line bet. secs 11 & 14.

40.00 Set temp.  $\frac{1}{4}$  sec. cor.

80.28 Intersect N. & S. line 5 lks. N. of the cor. of secs 11, 12, 13 & 14.

Thence from

West, on true line bet. secs 11 & 14 Over level creek bottom thru

Subdivisions of T. 20 S., R. 24 E.

chains

	undergrowth of greasewood 2 to 4 ft. high.
6.00	Left bank cottonwood wash, course SE.
7.00	Right "
40.14	Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for $\frac{1}{4}$ sec. cor. marked on brass cap $\frac{1}{4} S_{11}$ on N. half, and $S_{14}$ on S. half, dig pits $18 \times 18 \times 12$ ins. E. & W. of post 3 ft. dist., and raise a mound of earth $3\frac{1}{2}$ ft. base $1\frac{1}{2}$ ft. high N. of cor. Wash, course NE.
40.90	Leave greasewood, bears NE + S.
80.28	The cor. of secs. 10, 11, 14 + 15. Land level.
	E. 41 chs. level creek bottom, greasewood undergrowth 2 to 4 ft. high, rich sandy loam soil sub-soil, sandy loam. W 39 chs gradual S slope, no undergrowth, sandy loam soil, sub-soil, clay, very hard. No timber.

August 25, 1910

	August 26. For solar observation see page 28 line bet. secs. 15 + 16. N. 8° at W. bet. secs 10 + 11.
14.00	Over gently rolling land. Low ridge, bears E. + W.
26.70	Wash, course NE.
40.00	Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for $\frac{1}{4}$ sec. cor. marked on brass cap $\frac{1}{4} S_{10}$ on W. half and $S_{11}$ on E. half. dig pits $18 \times 18 \times 12$ ins. N. and S. of post 3 ft. dist.; and raise a mound of earth $3\frac{1}{2}$ ft. base $1\frac{1}{2}$ ft. high W. of cor.

Subdivisions of T. 20 S., R. 24 E.

claims.

- 48.20 Wash, 15 ft deep, 10 lks. wide,  
Course East
- 53.50 Wash, 10 ft deep, 20 lks. wide,  
Course East.
- 80.00 Set an iron post, 3 ft. long, 2 in. in  
dia., 24 ins. in the ground for  
cor. of secs. 2, 3, 10 & 11, marked on  
brass cap

T 20 S S 3 in NW.,

R 24 E S 2 in NE.,

S 11 in SE., and

S 10 in SW. quadrant,

dig pits 18 x 18 x 12 ins. in each  
sec., 5 $\frac{1}{2}$  ft. dist., and raise a  
mound of earth 4 ft. base 2  
ft. high W. of cor.

Land, gently rolling.

Soil: S 14 chs. S. slope, sandy  
loam soil, sub-soil, clay.

N 66 chs. NE slope, rich sandy  
loam soil, sub-soil, sandy  
loam. Very little undergrowth.  
No timber.

East, on a random line bet.  
secs 2 & 11.

40.00 Set temporary  $\frac{1}{4}$  sec. cor.

80.30 Intersect N. + S. line 2 lks. S. of  
the cor. of secs. 1, 2, 11 & 12

Greasewood

S. 89° 59' W., on true line bet. secs 2 & 11.

Over nearly level land

23.00 Enter greasewood undergrowth,  
2 to 3 ft. high, bears N. & S.

40.15 Set an iron post, 3 ft. long, 1 in. in  
dia., 26 ins. in the ground for  
 $\frac{1}{4}$  sec. cor. marked on brass cap

$\frac{1}{4}$  S 2 on N. half and S 11 on S  
half, dig pits 18 x 18 x 12 ins. E. +  
W. of post 3 ft. dist. and

Subdivisions of T. 20 S., R. 24 E.

chain

	raise a mound of earth $3\frac{1}{2}$ ft. base $1\frac{1}{2}$ ft. high N. of cor.
66.50	Left bank Cottonwood wash, course SSW
67.30	Right " "
80.30	The cor. of secs. 2, 3, 10 & 11. Land, level. Soil, rich sandy loam with light clay sub-soil. Under- growth of greasewood on W. 5 chs. No timber.
	<hr/>
	X knowing that closing corners are necessary on the N. bdy. of the tp.
	Drew
	No° 01' W. on true line bet Secs 2 & 3. Over nearly level land thru undergrowth of greasewood.
23.00	Right Bank Cottonwood wash, course SE
24.00	Left " "
27.00	Cottonwood wash is 5 chs. W.
30.25	Left bank same wash course SW
31.00	Right " "
38.50	" " " " SE
39.50	Left " " " " SE
40.00	Set an iron post 3 ft. long, 1 in. in dia., 26 ins in the ground for $\frac{1}{4}$ of sec. cor. marked on brass cap $\frac{1}{4} S 3$ on W. half and $S 2$ on E. half, dig pits $18 \times 18 \times 12$ ins. N. and S. of post 3 ft. dist., and raise a mound of earth $3\frac{1}{2}$ ft. base $1\frac{1}{2}$ ft. high W. of cor.
82.50	Intersect the N. bdy. of the tp 3.27 chs. S. $89^{\circ} 47'$ W. of the cor. of secs. 2, 3, 34 & 35 heretofore described. Set an iron post 3 ft. long, 2 ins. in dia., 24 ins. in the ground for closing cor. of secs. 2 & 3, marked on brass cap

CC T 19 S R 24 E S 34 S 35 in N. bdy.

Subdivisions of T20 S R24 E.

claims

S 2 in SE. and  
 S 3 in SW. quadrant,  
 dig pits 24 x 18 x 12 ins. crosswise  
 on each line, E & W 3 ft, and  
 S. of post 7 ft. dist. and raise  
 a mound of earth 4 ft base  
 2 ft. high S. of cor.  
 I destroy all marks on old  
 cor. pertaining to secs. 2 & 3.  
 Land nearly level  
 Soil, on entire line, rich sandy  
 loam, undergrowth of grease-  
 wood, with some grass. Sub-  
 soil, sandy loam. No timber

August 26-1910

August 24 For solar observation  
 see line bet secs 34 & 35, page 13  
 N. 0°1' W., bet. secs. 33 & 34

Over mountainous land.

Asc. steep SE. slope ridge

10.50 Top ridge, 150 ft. above cor. sec. cor.,  
 bears NE. + SW.

18.50 Gulch, drains SE. Head of  
 gulch is West  $1\frac{1}{2}$  chs.

Thence over gradual descending  
 ground sloping N.

40.00 Set an iron post, 3 ft. long, 1 in. in  
 dia., 26 ins. in the ground for  
 $\frac{1}{4}$  sec. cor. marked on brass  
 cap  $\frac{1}{4}$  S33 on W. half and S34  
 on E. half. and raise a mound  
 of stone 2 ft. base,  $1\frac{1}{2}$  ft. high  
 W. of cor. Pits impracticable.

49.00 Wash, coarse N. 80°W.

Gradually ascend.

75.50 Ridge, 100 ft. above wash, bears  
 NE. & SW.

80.00 Set an iron post, 3 ft. long, 2 ins. in  
 dia., 24 ins. in the ground for  
 cor. of secs. 28, 27, 33 & 34 marked

chains

## Subdivisions of T. 20 S., R. 24 E.

	on brass cap T 20 S S 28 in NW, R 24 E S 27 in NE, S 34 in SE, and S 33 in SW. quadrant. dig pits $18 \times 18 \times 12$ ins. in each sec. 5 $\frac{1}{2}$ ft. dist., and raise a mound of earth 4 ft. base 2 ft. high W of cor. Sand, mountainous Soil. S 11 chs. steep SE slope ridge. rocky soil, sub-soil. rocky. Nest 38 chs, N slope hilly land, rocky soil with very little undergrowth. N 31 chs. gradual S. slope, sandy loam soil, sub-soil clay no undergrowth. No. timber.
40.00	N $89^{\circ} 59' E.$ , on a random line bet secs. 27 & 34 Set temporary $\frac{1}{4}$ sec. cor.
80.40	Intersect N. & S. line 2 lks. N. of the cor. of secs. 26, 27, 34 & 35
20.60	Hence run West, on true line bet. secs. 27 & 34 Over rolling land & sparse undergrowth Wash, 10 lks. wide, 10 ft. deep, coarse S.W. Gradually ascend over land sloping almost SE.
40.20	Set an iron post, 3 ft long, 1 in. in dia., 2 ins. in the ground, for $\frac{1}{4}$ sec. cor. marked on brass cap $\frac{1}{4}$ S 27 on N. half and S 34 on S. half, dig pits $18 \times 18 \times 12$ ins. E. and W. of post, 3 ft. dist., and raise a mound of earth $3\frac{1}{2}$ ft. base $1\frac{1}{2}$ ft. high N of cor.
72.60	Ridge, brass, NE + SW.
80.40	The cor. of secs 27, 28, 33 & 34.

chains Subdivisions of T20 S, R24 E.

Land rolling

Soil. E 21 chs. rolling NW. slope.  
 Clay & some rocky soil, very little  
 undergrowth and no grass.  
 sub-soil very hard & dry clay.  
 W. 59 $\frac{1}{2}$  chs. rolling SE. slope.  
 clay soil - sub-soil - a very hard  
 and dry clay. No undergrowth  
 & no timber

August 24, 1910.

August 25-1910. For solar  
 observation see line bet. secs 32 & 33

page 32

N. 0°01' W., bet. secs 27 & 28

Gradually descend over gently  
 rolling land

40.00 Set an iron post, 3 ft. long, 1 in. in  
 dia., 26 ins. in the ground for  
 1/4 sec. cor. marked on brass  
 cap 1/4 S 28 on W. half and S 27  
 on E. half; dig pits 18 x 18 x 12  
 ins. N. & S. of post, 3 ft. dist., and  
 raise a mound of earth 3 $\frac{1}{2}$  ft.  
 base 1 $\frac{1}{2}$  ft. high W. of cor.

80.00 Set an iron post, 3 ft. long, 2 ins. in  
 dia., 24 ins. in the ground for  
 cor. of secs. 21, 22, 26 & 28 marked  
 on brass cap

T 20 S S 21 in NW,  
 R 24 E S 22 in NE,

S 27 in SE. and

S 28 in SW. quadrant,  
 dig pits 18 x 18 x 12 ins. in each  
 sec. 5 $\frac{1}{2}$  ft. dist., and raise a  
 mound of earth 4 ft. base 2 ft.  
 high W. of cor.

Based, gently rolling.

Soil, gently rolling NW. slope  
 surface soil gravelly, with very  
 little undergrowth or grass

## Subdivisions of T. 20 S., R. 24 E.

stans

	Sub-soil, clay, very dry & hard. No timber
	East, on a random line bet. secs 22 + 27
40.00	Set temporary $\frac{1}{4}$ sec. cor.
80.40	Intersect N. & S. line 2 lks. S. of the cor. of secs. 22, 23, 26 & 27
	Hence true S $89^{\circ}59'W$ , on true line bet. secs 22 + 27
	Over rolling hilly land
1.00	Descend over land sloping W.
7.60	Wash, 75 ft. below ridge, coarse NE.
	Asc. 50 ft.
16.00	Ridge bears NE. & SW.
	Gradually descend
40.20	Set an iron post, 3 ft. long 1 in. in dia., 26 ins. in the ground for $\frac{1}{4}$ sec. cor. marked on brass cap N 22 on N. half and S 27 on S. half; dig pits 18 x 18 x 12 ins. E. and W. of post, 3 ft. dist.; and raise a mound of earth $3\frac{1}{2}$ ft base $1\frac{1}{2}$ ft. high N. of cor.
40.25	Wash, coarse N.
57.60	Wash, coarse N. $10^{\circ}E$ .
80.40	The cor. of secs. 21, 22, 27 & 28. Land rolling & some hilly. Soil. E. 16 chs. hilly land drain- ing NE. soil gravelly surface. No undergrowth but some grass Sub-soil clay. W 64 chs. gently rolling, W slope for 24 chs thence a very gradual E slope soil clay, sub-soil very hard clay. No grass or undergrowth No timber
	August 25: At this sec. cor. I set off $10^{\circ}53\frac{1}{4}'N$ . on the decl. arc; and at $12^{\text{L}}.2^{\text{m}}$ . g. m. l. m. t. observe.

claims

## Subdivisions of T20 S, R24 E

		the sum on the meridian; the resulting lat. is $39^{\circ} 03\frac{1}{2}'$
		N. $0^{\circ} 01' W.$ , bet. secs. 21+22. Over level land.
40.00		Set an iron post, 3 ft. long, 1 in. in dia., 26 in. in the ground for $\frac{1}{4}$ sec. cor. marked on brass cap $\frac{1}{4} S 21$ on W. half and $S 22$ on E. half; dig pits $18 \times 18 \times 12$ in. N. and S. of post 3 ft. dist.; and raise a mound of earth $3\frac{1}{2}$ ft. base $1\frac{1}{2}$ ft. high W. of cor..
80.00		Set an iron post, 3 ft. long, 2 in. in dia., 24 in. in the ground for cor. of secs. 15, 16, 21+22 marked on brass cap T 20 S S 16 in NW., R 24 E S 15 in NE., $S 22$ in SE. and $S 21$ in SW. quadrant, dig pits $18 \times 18 \times 12$ in. in each sec. $5\frac{1}{2}$ ft. dist; and raise a mound of earth 4 ft. base 2 ft. high W. of cor. land, level. Soil, very gradual S slope, soil, rich sandy loam, no grass or undergrowth. sub-soil sandy loam with some dry clay No timber
		$N. 89^{\circ} 59' E.$ , on a random line bet. secs. 15+22.
40.00		Set temporary $\frac{1}{4}$ sec. cor.
80.38		Intersect N. & S. line 7 lks S. of the cor. of secs. 14, 15, 22, + 23. Hence true
		$S 89^{\circ} 56' W.$ , on true line bet. secs. 15+22.
		Over nearly level land
40.19		Set an iron post, 3 ft. long, 1 in. in

Subdivisions of T. 20 S., R. 24 E.

ctauis

		dia., 26 ins. in the ground for $\frac{1}{4}$ sec. cor. marked on brass cap $\frac{1}{4}$ S 15 on N. half and S 22 on S. half, dig pits $18 \times 18 \times 12$ ins. E. + W. of post 3 ft. dist., and raise a mound of earth $3\frac{1}{2}$ ft. base $1\frac{1}{2}$ ft. high N. of cor.
144.80		Wash, Course SE.
80.38		The cor. of secs. 15, 16, 21 & 22. Land nearly level. Soil: E 40 chs. very gentle W. slope W. 40 chs. very gentle S. slope, soil rich sandy loam, some good grass but no brush undergrowth Sub-soil a hard, dry clay. No timber
		August 25-1910
		August 26: At 7 <sup>h</sup> . 32 <sup>m</sup> a.m. l. m. t. I set off $39^{\circ} 04\frac{1}{4}'$ N. on the lat. arc: $10^{\circ} 36\frac{1}{2}'$ N. on the decl. arc; and determine a meridian with the solar at the cor. of secs. 15, 16, 21 & 22
6.00		Hence from $0^{\circ} 01' W.$ , bet. secs. 15 & 16 over rolling land.
40.00		Low ridge, bears NE + SW. Set an iron post, 3 ft. long, 1 in. in. dia., 26 ins. in the ground for $\frac{1}{4}$ sec. cor. marked on brass cap $\frac{1}{4}$ S 16 on W. half and S 15 on E. half; dig pits $18 \times 18 \times 12$ ins. N. and S. of post 3 ft. dist., and raise a mound of earth $3\frac{1}{2}$ ft. base $1\frac{1}{2}$ ft. high W. of cor.
80.00		Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in the ground for cor. of secs. 9, 10, 15 & 16, marked on brass cap

T 20 S 5 S 9 in NW,

Chains

## Subdivisions of T. 20 S., R. 24 E.

	R. 24 E. S. 10 in NE, S. 15 in SE, and S. 16 in SW. quadrant. dig pits $18 \times 18 \times 12$ ins. in each sec. $5\frac{1}{2}$ ft. dist.; and raise a mound of earth 4 ft. base 2 ft. high W. of cor. Land, rolling. Soil, rolling land with very gradual westerly slope. soil sandy loam. no undergrowth and very little grass. sub-soil sandy loam with a dry clay No timber
	N $89^{\circ} 56' E.$ , on a random line bet. secs. 10 + 15
40.00	Set temporary $\frac{1}{4}$ sec. cor.
80.38	Intersect N. + S. line 2 lks. S. of the cor. of secs. 10, 11, 14 + 15
	The pce line S $89^{\circ} 55' W.$ , on true line bet. secs. 10 + 15 Over gently rolling land. A low ridge bears N. + S. Set an iron post, 3 ft. long, 1 in. dia., 26 ins. in the ground for $\frac{1}{4}$ sec. cor. marked on brass cap. $\frac{1}{4}$ S. 10 on N. half and S. 15 on S. half, dig pits $18 \times 18 \times 12$ ins. E. and W. of post. 3 ft. dist. and raise a mound of earth $3\frac{1}{2}$ ft. base $1\frac{1}{2}$ ft. high R. of cor. The cor. of secs. 9, 10, 15 + 16. Land gently rolling. Soil. E 3.3 chs. eastern slope W. 47 chs. very gradual W. slope Soil rich sandy loam, bunch grass and some sage brush. sub-soil a hard dry clay. No timber
33.00	
40.19	
80.38	

Subdivisions of T 20 S, R 24 E.

chains

	N. $0^{\circ}0'1''$ W., bet. secs. 9 + 10 over rolling land
40.00	Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for $\frac{1}{4}$ sec. cor. marked on brass cap $\frac{1}{4}$ S 9 on W. half and S 10 on E. half; dig pits $18 \times 18 \times 12$ ins. N. + S. of post 3 ft. dist.; and raise a mound of earth $3\frac{1}{2}$ ft. base $1\frac{1}{2}$ ft. high W. of cor.
74.50	<sup>Graph shows east</sup> Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in the ground for cor. of secs. 3, 4, 9 + 10 marked on brass cap
80.00	T 20 S S 4 in NW, R 24 E S 3 in NE., S 10 in SE. and S 9 in SW. quadrant, dig pits $18 \times 18 \times 12$ ins. in each sec. $5\frac{1}{2}$ ft. dist., and raise a mound of earth 4 ft. base 2 ft. high W. of cor.
	Faith, rolling Soil, rolling land with a very gentle NW. slope. Soil sandy loam. No grass and very little brush undergrowth. Sub-soil a very hard dry clay. No timber
	N. $89^{\circ}55'E.$ , on a random line bet. secs. 3 + 10
40.00	Set temporary $\frac{1}{4}$ sec. cor.
80.36	Intersect N. + S. line 2 lks. N. of the cor. of secs. 2, 3, 10 + 11
	Theace Green S $89^{\circ}56'W.$ , on true line bet. secs. 3 + 10 Over rolling land.
13.00	Wash, coarse SE.
40.18	Set an iron post, 3 ft. long, 1 in. in

Subdivisions of T. 20 S., R. 24 E.

chains

dia., 26 ins. in the ground for  $\frac{1}{4}$  sec. cor. marked on brass cap  $\frac{1}{4} S 3$  on N. half and S. 0 on S. half, dig pits  $18 \times 18 \times 12$  ins. E. and W. of post 3 ft. dist., and raise a mound of earth  $3\frac{1}{2}$  ft. base  $1\frac{1}{2}$  ft. high N. of cor. The cor. of secs. 3, 4, 9 & 10 land rolling.

Soil: rolling land with an easterly drain, some under-growth of sage brush but very little grass. Soil, sandy loam sub-soil a sandy loam with a dry clay. No timber.

August 26. At this sec. cor. I set off  $10^{\circ} 32\frac{1}{2}'$  N. on the decl. arc; and at  $12^h 2^m$  p.m. l.m.t. observe the sun on the meridian the resulting lat. is  $39^{\circ} 06'$ .

August 26-1910

August 29. For solar observation see line bet. secs. 16 & 17, page 38 knowing that closing corners are necessary on the N. bdy. of the tp.

Drew,

No $^{\circ} 01'$  W., on true line bet. secs. 3 and 4 over rolling land.

Wash, 6 ft. wide, 4 ft. deep, coarse S. 80 $^{\circ}$ . Low ridge, bears E. & S.W.

Set an iron post, 3 ft. long, 1 in. dia., 26 ins. in the ground for  $\frac{1}{4}$  sec. cor. marked on brass cap  $\frac{1}{4} S 4$  on W. half and S. 3 on E. half, dig pits  $18 \times 18 \times 12$  ins. N.

\* S. of post 3 ft. dist., and raise a mound of earth  $3\frac{1}{2}$  ft. base  $1\frac{1}{2}$  ft. high W. of cor.

Enter greasewood bears NW & SE.

15.00

32.00

40.00

75.00

chains

## Subdivisions of T. 20 S., R. 24 E.

82.27	<p>Intersect the N. bdy. of the tp. 3.69 chs. S. <math>89^{\circ}48'W</math> of the cor. of secs. 3, 4, 33 + 34 heretofore described.</p> <p>Set an iron post, 3 ft. long, 2 in. in dia., 24 in. in the ground for <u>closing</u> of secs. 3 + 4, marked on brass cap</p> <p>CC T 19 S R 24 E S 33 S 34 on N. bdy. S 3 in SE. and S 4 in SW. quadrant, dig pits <math>24 \times 18 \times 12</math> in crosswise on each line, E. &amp; W. 4 ft., and S. of post 7 ft. dist. and raise a mound of earth 4 ft. base 2 ft. high S. of cor.</p> <p>Faud rolling</p> <p>Soil, rolling land with a northeasterly drain. High growth of greasewood on N 7 chs. some grass. Soil sandy loam on S 20 chs. clay soil on N 6 chs. Sub- soil of clay on the entire mile No timber!</p> <p>August 29: At this closing cor. I set off <math>9^{\circ}29'22''N</math> on the decl. arc; and at <math>12^h 2^m</math> p.m. l. m.t. observe the sun on the meridian the resulting lat. is <math>39^{\circ}07'</math></p> <p><u>August 29-1910</u></p> <p>August 25: at <math>8^h 2^m</math> a.m. l.m.t. I set off <math>39^{\circ}01'44''N</math>. on the lat. arc; <math>10^{\circ}57'N</math>. on the decl. arc. and determine a meridian with the solar at the standard cor. of secs. 32 + 33 on the S. bdy. of the tp. heretofore described Hence true <math>N.0^{\circ}02'W</math>, bet. secs. 32 + 33 Descend over mountainous</p>
-------	--

chains

## Subdivisions of T. 20 S., R. 24 E.

	land sloping N.
36.50	wash, course NW. A knoll bears West about 5 chs.
37.30	wash, course SW.
40.00	Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for $\frac{1}{4}$ sec. cor. marked on brass cap $\frac{1}{4} S 32$ on W. half and $S 33$ on E. half, raise a mound of stone 2 ft. base, $1\frac{1}{2}$ ft. high W. of cor. Pits impracticable.
48.20	Ridge, bears E. and W. descend
60.00	wash, course west. ascend
80.00	Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in the ground for cor. of secs. 28, 29, 32 + 33 marked on brass cap
	T 20 S S 29 in NW, R 24 E S 28 in NE, $S 33$ in SE and $S 32$ in SW quadrant, dig pits $18 \times 18 \times 12$ ins. in each sec. $5\frac{1}{2}$ ft. dist., and raise a mound of earth 4 ft. base 2 ft. high W. of cor.
	Land Mountainous. S. 60 chs. mountainous land with NW. slope. some under-growth of sage brush, but very little grass. soil rocky - sub-soil a dry hard clay. N 20 chs mountainous land with a S. slope. Soil, clay - sub-soil clay but rather moist. No timber

N  $89^{\circ} 56' E.$ , on a random line bet. secs. 28 + 33

40.00 Set temporary  $\frac{1}{4}$  sec. cor.

80.06 Intersect N. + S. line at the cor. of secs. 27, 28, 33 + 34

claims

## Subdivisions of T. 20 S., R. 24 E.

- Hence turn  
 $589^{\circ}56' W.$ , on true line bet. secs. 28 & 33  
 over rolling land sloping N.  
 29.00 Low ridge, bears  $N80^{\circ}W.$  &  $S80^{\circ}E.$   
 Descend over land sloping almost SW.
- 37.25 Wash course SW.  
 Hence over land facing S.  
 140.03 Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for  $\frac{1}{4}$  sec. cor. marked on brass cap.  $\frac{1}{4}S28$  on N. half and  $S33$  on S. half, dig pits  $18 \times 18 \times 12$  ins. E. & W. of post 3 ft. dist., and raise a mound of earth  $3\frac{1}{2}$  ft base  $1\frac{1}{2}$  ft. high N. of cor.
- 80.06 The cor. of secs. 28, 29, 32 & 33  
 Land rolling  
 E. 29 chs. rolling land with a N. slope. very little undergrowth but some bunch grass. W. 51 chs. a S. slope with no undergrowth. Soil on mile clay with a sub-soil of dry hard clay
- August 25-1910
- 
- August 29-1910: Hor. solar observation  
 see line bet. secs. 31 & 32. page 41  
 $N0^{\circ}02' W.$ , bet. secs. 28 & 29.  
 Over hilly land.  
 Ascend.
- 24.25 Ridge, bears N.E. & S.W., descend.  
 40.00 Set an iron post 3 ft. long, 1 in. in dia., 26 ins. in the ground for  $\frac{1}{4}$  sec. cor. marked on brass cap  $\frac{1}{4}S29$  on W. half and  $S28$  on E. half, dig pits  $18 \times 18 \times 12$  ins. N. & S. of post 3 ft. dist., and raise a mound of earth  $3\frac{1}{2}$  ft. base  $1\frac{1}{2}$  ft. high W. of cor.

chains

## Subdivisions of T 20 S, R 24 E.

	August 29: At this $\frac{1}{4}$ sec cor. I set off $10^{\circ} 11\frac{1}{2}' N$ on the decl arc, and at $12^{\circ} 17' m$ . l. m. t observe the sun on the meridian; the resulting latitude is $39^{\circ} 03'$
48.30	Wash, course SW. ascend spur, projects SW.
53.00	Descend 50 ft. to
58.25	Wash, course S. $30^{\circ} W$ . Hence along E. side of a low ridge.
80.00	Set iron post, 3 ft. long, 2 in. in dia., 24 in. in the ground for cor. of secs. 20, 21, 28 & 29 marked on Brass cap $T 20 S 520$ in NW, $R 24 E S 21$ in NE, $S 28$ in SE. and $S 29$ in SW. quadrant, dig pits $18 \times 18 \times 12$ in. in each sec. $5\frac{1}{2}$ ft. dist, and raise a mound of earth 4 ft. base 2 ft high W. of cor. Hard, mountainous S 53 cha. mountainous land draining SW. some grass but very little brush undergrowth. soil gravelly - sub-soil clay and sandy loam. N 27 cha. E. slope rich sandy loam soil good grass but no brush undergrowth Sub-soil a dry hard clay. No timber

N.  $89^{\circ} 56' E$ , on a random line bet. secs. 21 + 28.

40.00 Set temporary  $\frac{1}{4}$  sec. cor.  
 80.06 Intersect N. & S. line 5 lks. N. of the cor. of secs 21, 22, 27 + 28.

Hence from

S  $89^{\circ} 58' W$ , on true line bet. secs. 21 + 28

Subdivisions of T. 20 S., R. 24 E.

Claims

- Over nearly level land.
- 40.03 Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for  $\frac{1}{4}$  sec. cor. marked on brass cap  $\frac{1}{4}S\ 21$  on N. half and  $S\ 28$  on S. half, dig pits  $18 \times 18 \times 12$  ins. E. & W. of post 3 ft. dist., and raise a mound of earth  $3\frac{1}{2}$  ft. base  $1\frac{1}{2}$  ft. high N. of cor.
- 68.00 A low ridge, bears N. & S. Gradually descend.
- 78.50 Wash, 5 ins. wide, coarse S.
- 80.06 The cor. of secs. 20, 21, 28 & 29. Land gently rolling. E. 68 chs. very gentle E. slope. some grass, very little brush undergrowth W.  $\frac{1}{2}$  chs. W. slope for 10.50 chs. thence E. slope. good grass and no undergrowth. Soil - rich sandy loam - sub soil clay and sandy loam with some gravel. No timber
- 
- N.  $0^{\circ}02'W.$ , bet. secs. 20 & 21  
Over gently rolling land
- 140.00 Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for  $\frac{1}{4}$  sec. cor. marked on brass cap  $\frac{1}{4}S\ 20$  on W. half, and  $S\ 21$  on E. half, dig pits  $18 \times 18 \times 12$  ins. N. & S. of post 3 ft. dist., and raise a mound of earth  $3\frac{1}{2}$  ft. base  $1\frac{1}{2}$  ft. high W. of cor.
- 80.00 Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in the ground for cor. of secs. 16, 17, 20 & 21 marked on brass caps

T 20 S S 17 in NW.,

R 24 E S 16 in NE.,

S 21 in SE. and

S 20 in SW quadrant.

*claims* Subdivisions of T. 20 S., R. 24 E.

dig pits  $18 \times 18 \times 12$  ins. in each sec.  $5\frac{1}{2}$  ft. dist., and raise a mound of earth  $4$  ft. base  $2$  ft. high W. of cor.

Gently rolling S. slope with some grass and very little brush undergrowth. soil - sandy loam - sub-soil, a dry clay. No timber

$N 89^{\circ} 58' E$ , on a random line bet. secs. 16 + 21

40.00 Set. temporary  $\frac{1}{4}$  sec. cor.

80.08 Intersect N. + S. line at the cor. of secs. 15, 16, 21 + 22.

Thenke Tree

$S 89^{\circ} 58' W$ , on true line bet. secs. 16 + 21

Gradually ascend over SE. slope a low ridge; bears NE. + SW.

Very gentle descent.

Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for  $\frac{1}{4}$  sec. cor. marked on brass cap  $\frac{1}{2}$  S 16 on N. half and S 21 on S. half, dig pits  $18 \times 18 \times 12$  ins. E. + W. of post 3 ft. dist., and raise a mound of earth  $3\frac{1}{2}$  ft. base  $1\frac{1}{2}$  ft. high N. of cor.

53.35 Wash - 10 eks. wide, coarse S.

80.08 The cor. of secs. 16, 17, 20 + 21.

SE. slope for E. 6 chs. W. 7 chs. gentle S. + SW. slope. some bunch grass and no brush. Soil - a light clay with rich sandy loam, sub-soil a very hard dry clay. No timber

August 27, 1910

August 29: At 7<sup>h</sup>. 1<sup>m</sup> a.m. l.m.t.  
I set off  $39^{\circ} 04' 14''$  on the lat m.

chains

Subdivisions of T. 20 S. R. 24 E.

		<p><math>9^{\circ}35'</math> N. on the decl. arc; and determine a meridian with the solar at the cor. of secs. 16, 17, 20 &amp; 21.</p> <p>Hence from <math>N. 0^{\circ}02' W.</math>, bet. secs. 16 &amp; 17</p> <p>Over rolling land sloping S. &amp; W. Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for <math>\frac{1}{4}</math> sec. cor. marked on brass cap <math>\frac{1}{4} S 17</math> on W. half and <math>S 16</math> on E. half. dig pits <math>18 \times 18 \times 12</math> ins. N. &amp; S. of post 3 ft. dist. and raise a mound of earth <math>3\frac{1}{2}</math> ft. base <math>1\frac{1}{2}</math> ft. high W. of cor.</p> <p>Wash, 8 lks. wide, 5 ft. deep, coarse W.</p> <p>Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in the ground for cor. of secs. 8, 9, 16 &amp; 17 marked on brass cap</p>
		<p>T 20 S S 8 in NW., R 24 E S 9 in NE., <math>S 16</math> in SE, and <math>S 17</math> in SW. quadrant, dig pits <math>18 \times 18 \times 12</math> ins. in each sec. <math>5\frac{1}{2}</math> ft. dist. and raise a mound of earth 4 ft. base 2 ft. high W. of cor.</p> <p>Land gently rolling with a S. &amp; W. slope. some bunch grass and a short undergrowth of Shadscale. Soil - sandy-loam with sub-soil of a very hard dry clay.</p> <p>No timber.</p>
		<p><math>N. 89^{\circ}58' E.</math>, on a random line bet. secs. 9 &amp; 16.</p>
		<p>Set temporary <math>\frac{1}{4}</math> sec. cor.</p>
		<p>Intersect N. &amp; S. line 5 lks. N. of the cor. of secs. 9, 10, 15 &amp; 16.</p>

40.00		<p><math>N. 89^{\circ}58' E.</math>, on a random line bet. secs. 9 &amp; 16.</p> <p>Set temporary <math>\frac{1}{4}</math> sec. cor.</p>
80.12		<p>Intersect N. &amp; S. line 5 lks. N. of the cor. of secs. 9, 10, 15 &amp; 16.</p>

chains

Subdivisions of T. 20 S., R. 24 E.

	Ghence I run West, on true line bet. secs. 9 & 16 Over rolling land
40.06	Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for $\frac{1}{4}$ sec. cor. marked on brass cap $\frac{1}{4}$ S 9 on N. half and S 16 on S half dig pits $18 \times 18 \times 12$ ins. E. & W. of post 3 ft. dist., and raise a mound of earth $3\frac{1}{2}$ ft. base $1\frac{1}{2}$ ft. high N. of cor. The cor. of secs. 8, 9, 16 & 17.
80.12	Rolling land with a southerly slope. Some grass. very little shale undergrowth. soil, sandy loam. sub-soil, a very hard dry clay. No timber
40.00	$N. 0^{\circ} 02' W.$ , bet. secs. 8 & 9 Over nearly level land Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for $\frac{1}{4}$ sec. cor. marked on brass cap $\frac{1}{4}$ S 8 on W. half and S 9 on E. half, dig pits $18 \times 18 \times 12$ ins. N. & S. of post 3 ft. dist., and raise a mound of earth $3\frac{1}{2}$ ft. base $1\frac{1}{2}$ ft. high W. of cor.
80.00	Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in the ground for cor. of secs. 4, 5, 8 & 9, marked on brass cap

T 20 S S 5 in NW.,

R 24 E S 4 in NE.,

S 9 in SE, and

S 8 in SW. quadrant,

dig pits  $18 \times 18 \times 12$  ins. in each sec.  $5\frac{1}{2}$  ft. dist., and raise a mound of earth 4 ft. base 2 ft. high W. of cor.

Land nearly level with a south

Subdivisions of T. 20 S., R. 24 E.

claims

	and west drain. Very little grass or undergrowth. soil, sandy loam 1 <sup>st</sup> rate. sub-soil sandy loam with a dry clay. <u>No timber</u>
	East, on a random line bet. secs. 4 + 9 Set temporary 1/4 sec. cor. Intersect N. + S. line 5 lks. S. of the cor. of secs. 3, 4, 9 + 10
40.00	Ihnee Run S. 89° 58' W., on true line bet. secs. 4 + 9 over gently rolling land
80.10	wash, 8 lks. wide, 6 ft. deep, course SE Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for 1/4 sec cor. marked on brass cap 1/4 S 4 on N half and S 9 on S half dig pits 18 x 18 x 12 ins. E. + W. of post 3 ft. dist., and raise a mound of earth 3 1/2 ft. base 1 1/2 ft. high N. of cor.
12.20	The cor. of secs. 4, 5, 8 + 9.
40.05	Gaud rolling with a S. + E. drain some bunch grass and short greasewood undergrowth. soil sandy loam 1 <sup>st</sup> rate - sub-soil sandy loam. <u>No timber</u>
80.10	Knowing that closing corners are necessary on the N. bdy. of the tp.
	I Run N. 0° 0' 2" W. on true line bet. secs 4 + 5 Over level land
18.00	wash, 25 lks. wide, course East
21.60	Wagon road, bears NE + SW.
24.40	Old grade D. + R. G. narrow gauge rail road track, bears NE + SW.

chains.

Subdivisions of T. 20 S.R. 24 E.

- 28.60 Old wagon road, bears NE + SW  
31.80 Wash, 8 lks. wide, 4 ft. deep, course SE.  
40.00 Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for  $\frac{1}{4}$  sec. cor. marked on brass cap  $\frac{1}{4} S 5$  on W. half and  $S 4$  on E. half. dig pits  $18 \times 18 \times 12$  ins. N. + S. of post 3 ft. dist., and raise a mound of earth  $3\frac{1}{2}$  ft. base  $1\frac{1}{2}$  ft. high W. of cor.  
81.96 Intersect the N. bdy of the tp 3.91 chs  $S 89^{\circ} 45' W.$  of the cor. of secs. 4, 5, 32 + 33 heretofore described. Set an iron post, 3 ft. long, 2 ins in dia, 24 ins. in the ground for closing corner of secs 4 + 5 marked on brass cap CCT 19 S R 24 E S 32 S 33 in N. half  $S 4$  ins SE. and  $S 5$  ins SW. quadrant, dig pits  $24 \times 18 \times 12$  ins. crosswise on each line, E. + W. 3 ft. + S. of post 7 ft. dist., and raise a mound of earth 4 ft. base 2 ft. high S. of cor.  
Sawd level with an easterly drain. Some undergrowth of greasewood but no grass. soil sandy loam. sub-soil a loose clay and quite moist. No timber.

August 29, 1910

August 27: At 7<sup>th</sup>, m a. m. I. m. t. I set off  $39^{\circ} 01\frac{3}{4}' N.$  on the lat. arc:  $10^{\circ} 17' N.$  on the decl. arc. and determine a meridian with the solar <sup>standing</sup> at the cor. of secs. 31 + 32 on the S. bdy of the tp heretofore described.

Hence I run

$N 0^{\circ} 03' W.$  bet. secs. 31 + 32.

Subdivisions of T. 20 S., R. 24 E.

claims

	over hilly land
10.00	Ridge, bears N 85° E + W Gradually descend
37.80	Wash, 16 eks wide, course SE.
40.00	Set an iron post 3 ft. long, 1 in. in dia, 26 ins. in the ground for $\frac{1}{4}$ sec. cor. marked on brass cap $\frac{1}{4} S 31$ on W. half + S 32 on E half; dig pits $18 \times 18 \times 12$ ins. N. + S. of post 3 ft. dist. and raise a mound of earth $3\frac{1}{2}$ ft. base $1\frac{1}{2}$ ft. high W. of cor.
70.00	Ridge, 100 ft above $\frac{1}{4}$ cor. bears E + W.
80.00	Set an iron post, 3 ft. long, 2 ins. in dia, 24 ins. in the ground for cor. of secs. 29, 30, 31 & 32 marked on brass cap T 20 S S 30 in NW, R 24 E S 29 in NE, S 32 in SE, and S 31 in SW quadrant, dig pits $18 \times 18 \times 12$ ins. in each sec. $5\frac{1}{2}$ ft. dist. and raise a mound of earth 4 ft. base, 2 ft. high W. of cor. Mountainous land with SE + SW slopes. some undergrowth of shadscale and very little grass. Soil clay. sub-soil clay and some sandy loam. No timber
	N. $89^{\circ} 57' E.$ , on a random line bet. secs. 29 + 32.
40.00	Set temporary $\frac{1}{4}$ sec. cor.
80.18	Intersect N. + S. line 5 eks. N. of the cor. of secs. 28, 29, 32 + 33
	Gheude Tree S. $89^{\circ} 59' W.$ , on true line bet. secs. 29 + 32.

chains

## Subdivisions of T. 20 S., R. 24 E.

	Over hilly land sloping S.
40.09	Set an iron post, 3 ft. long, 1 in dia., 26 ins. in the ground for $\frac{1}{4}$ sec. cor. marked on brace cap $\frac{1}{4}$ S 29 on N. half and S 32 on S. half dig pits 18 x 18 x 12 ins E. & W. of post 3 ft. dist., and raise a mound of earth $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high N. of cor.
30.65	Wash and hollow, drains S. 20° E ascend
68.00	Ridge, bears N. & S. gradually descend
80.18	The cor. of secs. 29, 30, 31 & 32 E. 47.00 chs. hilly land with S. slope. no grass or undergrowth soil, clay with some gravel on W. 7 chs. sub. soil, a hard clay. W. 33 chs. mountainous land with E. & W. slope from ridge. some grass but no brush undergrowth, soil, clay & some sandy loam on last 12 chs. sub-soil clay. No timber

S 89° 56' W., on a random line bet. secs. 30 & 31

40.00	Set temporary $\frac{1}{4}$ sec. cor.
79.96	Intersect the W. bdy. of the tp. 11 lks. S. of the cor. of secs. 25, 30, 31 & 36 which is an iron post, 3 ins. in dia, 12 ins. above ground, firmly set, and marked and witnessed as described by the surveyor general.
	Hence True
	S 89° 59' E., on true line bet. secs 30 & 31

39.96	Over rolling land sloping SE. Set an iron post, 3 ft. long, 1 in dia., 26 ins. in the ground for
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Subdivisions of T. 20 S., R. 24 E.

claims

	1/4 sec. cor. marked on brass cap: "14 S 30 on N. half and S 31 on S. half, dig pits 18 x 18 x 12 ins. E. & W. of post 3 ft. dist., and raise a mound of earth 3 1/2 ft. base 1 1/2 ft. high N. of cor.
57.00	Wash 15 lks. wide, 10 ft. deep, course S
63.68	" 20 " " 15 " " SSW.
79.96	Ascend over land sloping W The cor. of secs. 29, 30, 31 & 32. W. 57 chs. rolling land with an easterly drain. Very little undergrowth. Soil, adobe. sub-soil a hard clay E. 23 chs. hilly land W slope. some short shadscale undergrowth. Soil sandy loam. sub-soil clay. <u>some gravel sub-soil near washes</u>
97.5	N. 0° 03' W., bet. secs. 29 & 30 Over hilly land, descending. Wash, course West. ascend
29.00	Spur projects W. Thence over land sloping W.
39.50	The point for 1/4 sec. cor. will fall in wash; therefore set an iron post, 3 ft. long 1 in. in dia., 26 ins. in the ground, for witness cor. to 1/4 sec. cor. marked on brass cap. T 20 S R 24 E on N. half, S 29 on E half, S 30 on W. half with W.C 1/4, and raise a mound of stone, 2 ft. base 1 1/2 ft. high W. of cor. Pits impracticable.
40.00	Point for 1/4 sec. cor. in wash, course SW. Ascend.
46.00	Top of nearly level branch, bears NW. & SE.
80.00	Set an iron post, 3 ft. long, 2 ins. in

Subdivisions of T. 20 S., R. 24 E.  
chain.

dia., 24 ins. in the ground for  
cor. of secs. 19, 20, 29 & 30, marked  
on brass cap

T 20 S. S. 19 in NW.

R 24 E S 20 in NE.,

S 29 in SE. and

S 30 in SW. quadrant,

dig pits  $18 \times 18 \times 12$  ins. in each  
sec. 5½ ft. dist. and raise a  
mound of earth 4 ft. base 2 ft.  
high W. of cor.

S. 19 cha. hilly land NW. slope  
some chadscale undergrowth.

Sandy loam soil - sub-soil gravelly  
Next 36 ¼ cha. hilly land W. slope.

Some sage brush undergrowth

Soil - gravelly & stony - sub-soil  
clay. N 34 cha. level bunch sage  
brush undergrowth, some grass.

Soil sandy loam. sub-soil sandy  
loam. No timber

N 89° 59' E., on a random line  
bet. secs. 20 & 29.

Set temporary ¼ sec. cor.

Intersect N. & S. line 5 lks. S. of  
the cor. of secs. 20, 21, 28 & 29

Thence, from

S. 89° 57' W., on true line bet. secs. 20 & 29  
over rolling land.

1.00 Low ridge, bears N. & S.

Described 75 ft.

10.50 Wash, 10 lks. wide, 15 ft. deep, course  
south.

Gradually asc.

40.10 Set an iron post, 3 ft. long, 1 in. in  
dia., 26 ins. in the ground for  
1/4 sec. cor. marked on brass  
cap 1/4 S 20 on N. half and S 29  
on S. half; dig pits  $18 \times 18 \times 12$  ins.

Subdivisions of T. 20 S., R. 24 E.

stans

	E. + W. of post, 3 ft. dist.; and raise a mound of earth $3\frac{1}{2}$ ft. base $1\frac{1}{2}$ ft. high N. of cor.
56.10	Ridge, bears NW. and SE descend
68.30	Wash, 20 lks. wide, 10 ft. deep, course S. $30^{\circ}$ E
80.20	The cor. of secs. 19, 20, 29 + 30 Land rolling with southwesterly drain sage brush undergrowth-some grass. Soil, sandy loam - sub-soil clay + sandy loam, rather moist No timber
	N. $89^{\circ}59'$ W on a random line bet. secs. 19 + 30
40.00	Set temporary $\frac{1}{4}$ sec. cor.
79.92	Intersect W. bdy of the tp 12 lks. S. of the cor. of secs. 19, 24, 25 + 30 which is an iron post, 3 in. in dia, 1 ft. above ground, firmly set, and marked and witnessed as described by the surveyor general. Hence from S. $89^{\circ}54'$ E., on true line bet. secs. 19 + 30
39.92	Over rolling clay ridges + hollows. Set an iron post, 3 ft. long, 1 in. in dia., 26 in. in the ground for $\frac{1}{2}$ sec. cor. marked on brass cap $\frac{1}{4}$ S 19 on N. half and S 30 on S. half; dig pits $18 \times 18 \times 12$ in. E. + W. of post. 3 ft. dist.; and raise a mound of earth $3\frac{1}{2}$ ft. base $1\frac{1}{2}$ ft. high N. of cor.
59.35	Wash, 20 lks. wide, 15 ft. deep, course S.
	Ave 75 ft to
69.00	Top of level bench, bears N. $30^{\circ}$ W. and SE.
79.92	The cor. of secs. 19, 20, 29 + 30

chains

Subdivisions of T. 20 S., R. 24 E.

	W. 59 chs. rolling clay hills. SE. drain no undergrowth, no grass, soil, adobe. sub-soil clay. E 21 chs. hilly & level land W. & N. slopes. some sage brush on E. 11 chs. good grass. soil sandy loam. sub-soil clay no timber
24.00	N. $0^{\circ}03'$ W. bet. secs. 19 + 20 over gently rolling land. Wash, coarse SE.
25.50	Low ridge bears NW. and SE.
40.00	Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for $\frac{1}{2}$ sec. cor. marked on brass cap $\frac{1}{4}$ $S\ 19$ on W. half and $S\ 20$ on E. half. dig pits $18 \times 18 \times 12$ ins. N. & S. of post. 3 ft. dist.; and raise a mound of earth $3\frac{1}{2}$ ft. base $1\frac{1}{2}$ ft. high W. of cor.
80.00	Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in the ground for cor. of secs. 17, 18, 19 & 20 marked on brass cap
	T 20 S S 18 in NW, R 24 E S 17 in NE, $S\ 20$ in SE. and $S\ 19$ in SW. quadrant, dig pits $18 \times 18 \times 12$ ins. in each sec. $5\frac{1}{2}$ ft. dist., and raised a mound of earth 4 ft. base 2 ft. high W. of cor.
	Gently rolling land with an easterly slope. Undergrowth of sage brush. some good grass. Soil, sandy loam, sub-soil sandy loam with some gravel. No timber

$N\ 89^{\circ}57'$  E. on a random line  
bet. secs. 17 + 20

Subdivisions of T. 20 S., R. 24 E.

etains

40.00	Set temporary $\frac{1}{4}$ sec. cor.
80.20	Intersect N. & S. line 7 lks. S. of the cor. of secs. 16, 17, 20 & 21
	Thence, True S. $89^{\circ} 54'$ W., on true line bet. secs. 17 & 20 Over nearly level land
34.10	Wash, coarse S.
40.10	Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for $\frac{1}{4}$ sec. cor. Marked on brass cap $\frac{1}{4}$ S 17 on N. half & S 20 on S. half, dig pits 18 x 18 x 12 ins. E. & W. of post 3 ft. dist.; and raise a mound of earth $3\frac{1}{2}$ ft. base $1\frac{1}{2}$ ft. high N. of cor.
61.50	Wash, coarse S.
80.20	The cor. of secs. 17, 18, 19 & 20 Nearly level land with S. slope very short undergrowth of shadscale. Soil - sandy loam. sub-soil, a very hard dry clay. No timber

August 27, 1910

August 30: At 7 h. a.m. l.m.t. I  
set off  $39^{\circ} 04\frac{1}{4}'$  on the lat. arc:  
 $9^{\circ} 13\frac{3}{4}'$  N. on the decl. arc; and  
determine a meridian with the  
solar at the cor. of secs. 17, 18, 19 &  
20 heretofore described

Thence, True

N  $89^{\circ} 54'$  W., on a random line bet.  
secs. 18 & 19.

40.00	Set temporary $\frac{1}{4}$ sec. cor.
79.82	Intersect the W. bdy. of the tp. 21 lks. S. of the cor. of secs. 13, 18, 19 & 24 which is an iron post, 3 ins. in dia., 1 ft. above ground, firmly set and marked and witnessed as described by the surveyor general.

chains

## Subdivisions of T. 20 S., R. 24 E.

- Hence from  
 $38^{\circ} 90' 45'' E.$ , on true line bet. secs. 18 & 19  
 over gently rolling land.  
 Road. bears  $77^{\circ} 30' E.$  &  $320^{\circ} W.$   
 21.80 Old grade N. & R. G. narrow gauge  
 railroad bears  $NE + SW$   
 23.10 Set an iron post, 3 ft. long, 1 in. in  
 dia., 26 ins. in the ground for  
 $\frac{1}{4}$  sec. cor. marked on brass cap  
 $\frac{1}{4} S 18$  on N. half and S. 19 on S.  
 half; dig pits  $18 \times 18 \times 12$  ins. E. & W.  
 of post 3 ft. dist., and raise a  
 mound of earth  $3\frac{1}{2}$  ft. base  $1\frac{1}{2}$  ft.  
 high N. of cor.  
 29.82 Wash, coarse SE.  
 58.50 Wash, coarse S.  
 60.00 Wash, coarse S.  
 79.82 The cor. of. secs. 17, 18, 19 & 20  
 Gently rolling land with very gentle  
 S. slope. undergrowth of sage  
 brush, some grass. soil, rich  
 sandy loam. sub-soil sandy loam.  
 No timber
- 
- $71.0^{\circ} 03' W.$ , bet. secs. 17 & 18.  
 over gently rolling land.  
 Set an iron post, 3 ft. long, 1 in. in  
 dia., 26 ins. in the ground for  
 $\frac{1}{4}$  sec. cor. marked on brass cap  
 $\frac{1}{4} S 18$  on W. half and S. 17 on  
 E. half; dig pits  $18 \times 18 \times 12$  ins. N.  
 and S. of post 3 ft. dist., and  
 raise a mound of earth  $3\frac{1}{2}$  ft.  
 base  $1\frac{1}{2}$  ft. high W. of cor.  
 40.00 Old grade N. & R. G. narrow gauge  
 railroad track, bears  $NE + SW$   
 79.35 Set an iron post, 3 ft. long, 2 in. in  
 dia. 24 ins. in the ground for  
 cor. of secs. 7, 8, 17 & 18 marked  
 on brass cap

T 20 S S 7 in NW,  
 R 24 E S 8 in NE,

Subdivisions of T. 20 S., R. 24 E.

chains

		<p><math>S^{17}</math> in SE, and  <math>S^{18}</math> in SW quadrant,      dig pits <math>18 \times 18 \times 12</math> ins. in each      sec. <math>5\frac{1}{2}</math> ft. dist., and raise a      mound of earth <math>4</math> ft. base <math>2</math> ft.      high W. of cor.</p> <p>Gently rolling land with very      gradual N. slope. some under-      growth chadscale, some grass.      Soil, rich sandy loam, sub-soil      sandy loam with a light clay      No timber</p> <hr/>
		<p><math>N. 89^{\circ} 54' E.</math>, on a random line      bet. secs. 8 + 17</p>
40.00		Set temporary $\frac{1}{4}$ sec. cor.
80.18		Intersect $N. + S.$ line at the cor. of secs. 8, 9, 16 + 17
		Thence I run
		$S. 89^{\circ} 54' W.$ , on true line bet. secs. 8 + 17
		Over nearly level land
34.50		Brush, 6 lks. wide, 3 ft. deep, coarse. $S. 20^{\circ} E$
40.09		Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for $\frac{1}{4}$ sec. cor. marked on base cap $\frac{1}{4}$ $S 8$ on N. half and $S^{17}$ on S. half. dig pits $18 \times 18 \times 12$ ins. E. + W. of post $3$ ft. dist., and raise a mound of earth $3\frac{1}{2}$ ft. base $1\frac{1}{2}$ ft. high N. of cor.
79.50		Old grade D. + R. G. narrow gauge railroad track bears NE + NW
80.18		The cor. of secs. 7, 8, 17 + 18.
		Gently rolling land with gentle easterly slope. Chadscale under- growth, some good bunch grass. Soil, rich sandy loam, sub-soil sandy loam with a light clay No timber
		$N. 89^{\circ} 45' W.$ , on a random line bet.

claims.

# Subdivisions of T. 20 S., R. 24 E.

		secs 7 + 18
40.00		Set. temp. $\frac{1}{4}$ sec. cor.
79.74		Intersect the W. bdy. of the tp. by lks. S. of the cor. of secs 7, 12, 13 + 18 which is an iron post, 3 ins. in dia., 1 ft. above ground, firmly set. and marked and witnessed as described by the surveyor general
		Gauge Drum $S.89^{\circ}44'E$ , bet. secs. 7 + 18 on a tree line. Over nearly level land.
39.74		Set an iron post, 3 ft. long, 1 in. in dia., 2.6 ins. in the ground, for $\frac{1}{4}$ sec. cor. marked on brass cap $\frac{1}{4}S7$ on N. half and $S.18$ on S half. dig pits $18 \times 18 \times 12$ ins. E. + W. of post 3 ft. dist., and raise a mound of earth $3\frac{1}{2}$ ft. base $1\frac{1}{2}$ ft high N. of cor.
43.85		Wash, 12 lks. wide, 4 ft. deep, coarse $S.15^{\circ}E$ .
79.20		Road, bears NE. + SW
79.74		The cor. secs. 7, 8, 17 + 18. Gently rolling land with very gradual $S + W$ slope. Chadscale undergrowth. good grass, soil, sandy loam, sub-soil sandy loam No timber
		<hr/>
		$7.0^{\circ}03'W$ , bet. secs. 7 + 8 Over level land.
1.00		Road bears NE. + SW.
40.00		Set an iron post, 3 ft. long, 1 in. in dia., 2.6 ins. in the ground for $\frac{1}{4}$ sec. cor. marked on brass cap $\frac{1}{4}S7$ on W. half and $S.8$ on E. half, dig pits $18 \times 18 \times 12$ ins. N. and S. of post 3 ft. dist., and raise a mound of earth $3\frac{1}{2}$ ft. base $1\frac{1}{2}$ ft. high W. of cor.
80.00		Set an iron post, 3 ft. long, 2 ins. in

chains.

### Subdivisions of T. 20 S. R. 24 E.

dia., 24 ins. in the ground for cor. of secs. 5, 6, 7 & 8, marked on brass cap  
T 20 S S 6 in NW,  
R 24 E S 5 in NE,  
S 8 in SE. and  
S 7 in SW, quadrant  
and dig pits 18 x 18 x 12 ins. in  
each secs.  $5\frac{1}{2}$  ft. dist., and raise  
a mound of earth 4 ft. base 2  
ft. high. W. of cor.  
level land. Undergrowth of  
greasewood and chadscale. some  
good grass. soil, rich sandy  
loam, sub-soil. sandy loam.  
No timber

August 30: At this sec. cor. I set  
off  $9^{\circ} 08' N.$  on the decl. arc;  
and at 12<sup>h</sup> m. l. m. t. observe the  
sun on the meridian; the  
resulting lat. is  $39^{\circ} 06'$ .

N.  $89^{\circ} 54' E.$  on a random line  
bet. secs. 5 & 8.

40.00 Set temporary  $\frac{1}{4}$  cor.  
80.20 Intersect N. & S. line 2 eks. N. of the  
cor. of secs. 4, 5, 8 & 9.

Hence from

S  $89^{\circ} 55' W.$ , on true line bet. secs. 5 & 8  
Over level land.

19.00 Center of old grade W. & R. G. narrow  
gauge rail road track, bears  
NE. & SW.

25.00 Wagon road, bears NE. & SW.  
40.10 Set an iron post, 3 ft. long, 1 in. in  
dia., 26 ins in the ground for  
 $\frac{1}{4}$  sec. cor. marked on brass  
cap  $\frac{1}{4}$  S 5 on N. half and S 8 on  
S. half. dig pits 18 x 18 x 12 ins. E &  
W. of post 3 ft. dist., and raise

chains

## Subdivisions of T. 20 S., R. 24 E.

80.20

a mound of earth  $3\frac{1}{2}$  ft. base  $1\frac{1}{2}$  ft. high N. of cor.  
 The cor. of secs. 5, 6, 7 & 8.  
 Level land with gentle East slope  
 shadscale undergrowth, good  
 grass, soil, sandy loam. sub  
soil sandy loam with a light clay  
No timber.

40.00

N  $89^{\circ} 44'$  W., on a random line  
 bet. secs. 6 & 7

79.70

Set temporary  $\frac{1}{14}$  sec. cor.  
 Intersect the W. bdy. of the tp.  
 38 lks. S. of the cor. of secs. 1, 6 & 7 +  
 12. which is an iron post, 3 ft. in  
 dia., 1 ft. above ground, firmly set,  
 and marked and witnessed  
 as described by the surveyor  
 general.

The correction of this line is  
 S.  $89^{\circ} 28'$  E. which deviates more  
 than  $21'$  of arc from the S. bdy.  
 of the tp. therefore: At a point  $8\frac{1}{2}$   
 lks. S. of the cor. of secs. 1, 6, 7 + 12  
 set an iron post, 3 ft. long, 2 ins.  
 in dia., 24 ins. in the ground  
 for closing cor. of secs. 6 & 7,  
 marked on brass cap.

T 20 S. on N half,

R 23 E CCS 1  $5\frac{1}{2}$  on W half,  
 S 6 in NE. and

S 7 in SE quadrant,  
 dig pits  $24 \times 18 \times 12$  ins. crosswise on  
 each line. N. + S. 3 ft., and E. of  
 post 7 ft. dist., and raise a  
 mound of earth 4 ft. base 2 ft.  
 high E. of cor.

I destroy all marks on old cor.  
 pertaining to secs. 6 & 7.

Hence I run

N  $89^{\circ} 56'$  E., on true line bet. secs 6 & 7.

chains

Subdivisions of T. 20 S., R. 24 E.

- Over nearly level land  
Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground, for  $\frac{1}{4}$  sec. cor. marked on brass cap  $\frac{1}{4}$  S 6 on N. half and S 7 on S. half, dig pits 18 x 18 x 12 ins. E. & W. of post, 3 ft. dist., and raise a mound of earth  $3\frac{1}{2}$  ft. base  $1\frac{1}{2}$  ft. high N. of cor.
- 79.70 The cor. of secs. 5, 6, 7 & 8.  
Land gently rolling with very gradual W. slope. Undergrowth of short shadscale, some grass.  
Soil sandy loam 1<sup>st</sup> rate. Sub-soil sandy loam with a light dry clay  
No timber
- 
- Knowing that closing corners are necessary on the N. bdy. of the tp. I run  
N.  $0^{\circ}03'W$ , on true line bet. secs. 5 & 6  
Over gently rolling land.
- 40.00 Set an iron post, 3 ft. long, 1 in. in dia., 26 ins in the ground for  $\frac{1}{4}$  sec. cor. marked on brass cap  $\frac{1}{4}$  S 6 on W. half and S 5 on E half, dig pits 18 x 18 x 12 ins. N. & S. of post 3 ft. dist., and raise a mound of earth  $3\frac{1}{2}$  ft. base  $1\frac{1}{2}$  ft. high W. of cor.
- 81.54 Intersect the N. bdy. of the tp.  
4.02 cha. S  $89^{\circ}46'W$ . of the cor. of secs. 5, 6, 31 & 32 heretofore described  
Set an iron post 3 ft. long, 2 in. in dia., 24 ins. in the ground for closing cor. of secs. 5 & 6 marked on brass cap  
CCT 19 S R 24 E S 31 S 32 in N. half  
S 5 in SE. and  
S 6 in SW. quadrant,  
dig pits 24 x 18 x 12 Crosswise on

chains

Subdivisions of T. 20 S., R. 24 E.

each line, E. & W. 3 ft., and S. of post 7 ft. dist., and raise a mound of earth 4 ft. base 2 ft high S. of cor.

Land gently rolling with very gradual S. & E. slope. no under-growth. very little grass. soil - clay sub-soil a very hard dry clay no timber

August 30. 1910

# Synopsis of settlers in T. 20 S. R. 24 E.

George H. Canfield.  $\frac{1}{2}$  of  $SE^{\frac{1}{4}}$  and the  $\frac{1}{2}$  of the  $SW^{\frac{1}{4}}$  sec. 35. This land lies at the base of a high mesa & has a very gentle south & west slope. The soil is a rich sandy loam with a subsoil of sandy loam, which is capable of producing abundant crops with irrigation. A small cabin, worth about \$100 has been built on the place and is occupied by Mr. Canfield.

Walter Squires:  $SE^{\frac{1}{4}}$  sec. 34. This land lies at the base of a high mesa & has a very gradual south slope. The soil is a rich sandy loam with sub-soil of sandy loam. This land is capable of producing abundant crops with irrigation. A cabin occupied by Mr. Squires, and a small shed are the improvements on the place, which amount would not be greater than \$250.

Fred J. Wait:  $SE^{\frac{1}{4}}$ ,  $NE^{\frac{1}{4}}$  and  $E^{\frac{1}{2}}$ ,  $SE^{\frac{1}{4}}$ , and  $SW^{\frac{1}{4}}$   $SE^{\frac{1}{4}}$  sec. 25. This is a gently rolling bench with a good rich sandy loam soil, capable of producing abundant crops with irrigation. Mr. Wait lives in a small house worth about \$225.

Henry H. Mohr.  $SE^{\frac{1}{4}}$  of  $NE^{\frac{1}{4}}$  sec. 35;  $S^{\frac{1}{2}}$   $NW^{\frac{1}{4}}$  & the  $NE^{\frac{1}{4}}$  of the  $NW^{\frac{1}{4}}$  sec. 36.

This land lies at the foot of a high mesa. The land lying nearest the mesa is a gravelly soil with sub-soil of dry clay, while that of the land lying away from the base is a rich sandy loam, which is capable of producing abundant crops with irrigation. Mr. Mohr owns a small cabin in sec. 35 valued at about

8  
75.

Simp V. Leonard,  $W\frac{1}{2}$  of  $SE\frac{1}{4}$ , +  $NE\frac{1}{4}$  of  $SW\frac{1}{4}$  and the  $SW\frac{1}{4}$  of the  $NE\frac{1}{4}$  of sec. 24.  
This is a gently rolling piece of land with an easterly slope and drained by Cottonwood wash. The soil is a light clay & sandy loam with a subsoil of hard dry clay. This land with the aid of irrigation is capable of producing abundant crops. Mr Leonard lives in a small cabin worth about 75 to 100.

Grand Valley Fruit & Water Co. This company at present is constructing a dam across Cottonwood wash in the  $NE\frac{1}{4}$  of sec. 24. They are also building a ditch along the base of the mesa thru secs. 24, 25, 34, 35 + 36 which will carry water to the land belonging to the above described settlers. This ditch as proposed will carry water to numerous other places outside of the township.

William Shideler,  $NE\frac{1}{4}$  of the  $SE\frac{1}{4}$  and the  $NE\frac{1}{4}$  of the  $SW\frac{1}{4}$  of sec. 35. This land lies at the base of a high mesa and the soil is a rich sandy loam with a deep sandy sub-soil and will produce crops with irrigation. The improvements on this place which consist of only a small dwelling house and barn amount to about \$100. An Indian residing in sec. 24, has erected a small dwelling house, worth about \$50. No other improvements have been made around this place.

## General Description

This township contains nearly every variety of land from plains to mountains, and the soil ranges from a hard dry clay to sandy loam. The soil of the bottom land along the base of the high mesa which extends thru secs 33, 34, 35, 36, 25 & 24 is generally rich, sandy loam, capable of producing abundant crops with irrigation. The soil of the remaining portion of the township, except the mountainous land, can be classed as first rate.

This part may be called an arid plain, the soil ranging from clay to sandy loam all of which is very hard and dry. Irrigation will be necessary to produce crop. Very little undergrowth is found on this land and occasionally a patch of bunch grass.

Some scrub cedar & Juniper trees are found in secs 24 & 25 but are of no value.

This township is not well watered. Cottonwood wash flows thru the North eastern part in a south-easterly direction. This wash carries water during the rainy & winter months but usually is dry in summer. A spring of good clear water is found in sec. 35.

There are two settlers in secs. 25 & 35 & one each in secs. 34, 36 & 24. These settlers will cultivate farms by irrigation from the water in Cottonwood wash.

There are no mineral indications in the township.

Howard W. Miller  
U. S. Instrumentman

FINAL OATHS OF DEPUTY SURVEYOR AND HIS ASSISTANTS.

LIST OF NAMES.

A list of the names of the individuals employed by Howard W. Miller,  
Instrumentman, United States Deputy Surveyor, to assist in running, measuring, and  
marking the lines and corners described in the foregoing field notes of the survey of the  
subdivisions of T 20 S, R 24 E., S.L.B. & Y., Utah,  
showing the respective capacities in which they acted:

Fred Wright, Chainman. ✓

Karl Rothermund, Chainman. ✓

Roscoe C. Hallett, Moundman. ✓

, Moundman.

, Axman.

, Axman.

Ben Eagle, Flagman. ✓

FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted Howard W. Miller,  
Instrumentman, United States Deputy Surveyor, in surveying all  
those parts or portions of the subdivisions of T 20 S, R 24 E.

of the Salt

Lake Base of meridian, State of Utah, which are represented  
in the foregoing field notes as having been surveyed by him and under his direction; and that said survey  
has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the  
corner monuments established, according to the instructions furnished by the United States Surveyor  
General for Utah.

Fred Wright, Chainman. ✓

Karl Rothermund, Chainman. ✓

Roscoe C. Hallett, Moundman. ✓

, Moundman.

, Axman.

, Axman.

Ben Eagle, Flagman. ✓

Subscribed and sworn to before me this 30<sup>th</sup>

day of August, 1900 }



Howard W. Miller  
U.S. Instrumentman

FINAL OATH OF UNITED STATES DEPUTY SURVEYOR.

I, \_\_\_\_\_, United States Deputy Surveyor, solemnly swear that, in pursuance of a contract received from United States Surveyor General for \_\_\_\_\_, bearing date of \_\_\_\_\_ day of \_\_\_\_\_, 190\_\_\_\_\_, I have well, faithfully, and truly, in my own proper person, and in strict conformity with the instructions furnished by the United States Surveyor General for \_\_\_\_\_, the Manual of Surveying Instructions, and the laws of the United States, surveyed all those parts or portions of \_\_\_\_\_.

For final oath of transitman see book "z1" T. 24 S., R. 26 E.

..... of the .....  
..... meridian, in the ..... of ..... which are represented in the foregoing field notes as having been surveyed by me, and under my direction; and I do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the Manual of Surveying Instructions, and the special written instructions of the United States Surveyor General for ..... and in the specific manner described in the field notes, and that the foregoing are the original field notes of such survey.

United States Deputy Surveyor

Subscribed by said \_\_\_\_\_, and sworn to before me }  
this ..... day of \_\_\_\_\_, 190 }

SEAL  
\_\_\_\_\_

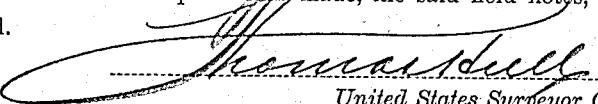
APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Salt Lake City, Utah, June 25, 1913.

The foregoing field notes of the survey of the subdivisional lines of Township No. 20 South, Range No. 24 East of the Salt Lake Base and Meridian, Utah.

executed by Howard W. Miller  
under his contract No. \_\_\_\_\_, dated August 6, 1910, having been critically examined, and the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

  
Howard W. Miller  
United States Surveyor General

I certify that the foregoing transcript of the field notes of the above-described surveys in \_\_\_\_\_, has been correctly copied from the original notes on file in this office.

United States Surveyor General

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BOOK A-378,  
Book E

FILED

MAR 11 1911

M. S. B.

## FIELD NOTES

OF THE SURVEY OF THE

Retracement, Resurveying and Survey  
of the 4<sup>th</sup> Standard Parallel South  
through Rangee 25 + 26 East

of the Salt Lake Base <sup>end</sup> Meridian, Utah.

AS SURVEYED BY

Howard W. Miller, <sup>Transitman</sup> United States Deputy Surveyor.

Assignment Group  
Under his Contract No. 4, Utah, dated August 6, 1900

Survey commenced August 31, 1900

Survey completed September 7, 1900

## NAMES AND DUTIES OF ASSISTANTS.

Fred Wright, chairman

Ben Egle, chairman

Karl Rothermund, chairman

Edward Jones, chairman

Roscoe Hallett, moundsman

Roscoe Hallett, ax man

BOOK A-378

INDEX DIAGRAM.

Township 20 South, Range 25 East.

6	5	4	3	2	1
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19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
1. 4	2	4. 12	11	9	7

4<sup>th</sup> Standard Parallel South  
Meanders Page.

T 20 S. R 26 E

Sec 31 Sec 32

16 17

4<sup>th</sup> Standard Parallel S.

**PRELIMINARY OATHS OF ASSISTANTS.**

WE, Fred Wright, Ben Eagle and Karl Rothermund & Edward Jones,

do solemnly swear that we will well and faithfully execute the duties of chainmen; that we will lay chain upon even and uneven ground, and plumb the tally pins, either by sticking or dropping the same; we will report the true distances to all notable objects, and the true lengths of all lines that we are measuring, to the best of our skill and ability, and in accordance with instructions given us, in the said

Retracement, resurvey & survey of the 4<sup>th</sup> standard Parallel, S. I. B. & M., Utah.

Fred Wright, Ben Eagle, Karl Rothermund & Edward Jones,

Chainsman, Chainsman, Chainsman, Chainsman

Subscribed and sworn to before me this 31

day of August, 190



I, Roseog Hallett and

do solemnly swear that we will well and truly perform the duties of moundmen in the establishment of corners, according to the instructions given me, to the best of our skill and ability, in the said

Retracement, resurvey & survey of the 4<sup>th</sup> standard Parallel, S. I. B. & M., Utah.

Roseog Hallett, Moundman

Moundman

Subscribed and sworn to before me this 31

day of August, 190



I, Roseog Hallett and

do solemnly swear that we will well and truly perform the duties of axmen in the establishment of corners and other duties, according to instructions given me, to the best of our skill and ability, in the said

Retracement, resurvey & survey of the 4<sup>th</sup> standard Parallel, S. I. B. & M., Utah.

Roseog Hallett, Axman

Axman

Subscribed and sworn to before me this 31

day of August, 190



Howard W. Miller  
U. S. Instrumentman

I, Howard W. Miller, do solemnly swear that I will well and truly perform the duties of flagman according to instructions given me, to the best of my skill and ability, in the said Retracement, resurvey & survey of the 4<sup>th</sup> standard Parallel, S. I. B. & M., Utah.

Flagman

Subscribed and sworn to before me this 31

day of August, 190



Replacement & Recovery of the 11<sup>th</sup> Standard Parallel South, R. 25 E.

Survey commenced August 31, 1910  
and executed with a W. & S. E. Gurley  
solar compass No 10113. For  
description and test of instrument  
see book A of this survey.

I begin at the standard cor. of T. 20  
S., R. 25 24' 28" E. heretofore described.  
Latitude 39° 01' 14" N., longitude  
109° 14' 10" W.

I know the instrument to be in  
adjustment by previous observations  
on Polaries at this cor. Aug. 31, 1910.  
At 7<sup>th</sup> a.m. l.m.t. I set off, 39° 01'  
14" N. on the lat. arc, 8° 82' 18" W.  
on the decl. arc, and determine a  
meridian with the solar at the  
above described cor.

Thence from

East, retracing on the S. bdy. of Sec. 31.  
Difference between measurement  
of 113.01 chs. by 2 sets of chainmen,  
is 6 chs.; position of middle point  
By 1<sup>st</sup> set, 113.01 chs.

By 2<sup>nd</sup> set, 113.07 chs.; the  
mean of which is

113.04 1/2 all 113 chs. N. of the standard  
1/4 sec. cor. which is a sand-stone  
16 x 6 x 5 ins. lying on the ground  
mkd. S C 1/4 on upper face. no  
accessories to cor. The marks  
on the stone are nearly obliterated.  
I destroy all traces of the old  
cor. and re-establish it at the  
same point as follows:

Set an iron post, 3 ft. long, 1 in. in  
dia., 26 lbs. in the ground for  
standard 1/4 sec. cor. mkd on  
brass cap S 31 1/4 on N. half;  
dig pits 18 x 18 x 12 ins. E. & W. of  
post 3 ft. dist and raise a  
mound of earth 3 1/2 ft. base 1 1/2 ft.

Retracement & Resurvey of the 4<sup>th</sup> Standard Parallel South, Okanogan  
chains

	high N. of cor.
	The true bearing of this line is S. 89° 26' E. and the distance is 43.04 chs. From the standard 1/4 cor. I continue East, making careful search at intervals of 40 chs. for standard 1/4 and sec. cors.
	Difference between measurement of 120.18 chs. by 2 sets of chainmen is 12 lks. the position of middle point By 1 <sup>st</sup> set 120.12 chs.
	By 2 <sup>nd</sup> set 120.24 chs. the mean of which is
120.18	Fall 3 lks. S. of the standard cor. of secs. 32 + 33 which is a sand- stone 10 x 12 x 5 ins. above ground, loosely set, and marked and wit- nessed as described by the surveyor general. I destroy all traces of the old standard cor., and re-establish it at the same point as follows: Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in the ground, for standard cor. of secs. 32 + 33 mkd on brass cap
	T 20 S. R. 25 E. on N. half S 32 in NW. quad S 33 in NE. quadrant.
	raise a mound of stone 2 ft. base 2 ft. high N. of cor. Hence I run S. 89° 59' W. resurveying on S. bdy sec. 32 Over mountainous land.
16.00	Asc. E. slope of ridge Top of ridge, 100 ft. above cor., bears N. + S. Hence descend towards canyon. Difference between measurement of 40.06 chs. by 2 sets of chainmen is 4 lks. position of middle point By 1 <sup>st</sup> set 40.09 chs.

Retracement & Resurvey of the 4<sup>th</sup> Standard Parallel South, R 25 E.  
chains

- By 2<sup>nd</sup> set, 40.08 chs.; the mean  
of which is
- 140.06 Set an iron post, 3 ft. long, 1 in. in  
dia., 26 ins. in the ground & mound  
of stone for standard 1/4 sec. cor.  
marked on brass cap S 32 1/4 E on  
N. half; raise a mound of stone  
2 ft. base 1 1/2 ft. high N. of cor.  
Pits impracticable
- 53.20 Canyon, 350 ft. below ridge, course  
SW.  
Hence asc. over series of ledges,  
25 to 50 ft. high
- 67.30 Spur, 200 ft. above canyon, projects SW.  
Descend
- 73.40 Hollow, drains SW.  
Asc. 175 ft  
Difference between measurement  
of 80.12 chs. by two sets of chains  
is 6 eks. position of middle point  
By 1<sup>st</sup> set, 80.09 chs.  
By 2<sup>nd</sup> set, 80.15 chs., the mean  
of which is
- 80.12 Set an iron post, 3 ft. long, 3 ins. in  
dia., 24 ins. in the ground for  
standard cor. of secs. 31 & 32, marked  
on brass cap
- T 20 S R 25 E on N half  
S 31 in NW. and  
S 32 in NE. quadrant,  
dig pits 24 x 18 x 12 ins., crosswise  
on each line, E. & W. 3 ft., and  
N. of post 7 ft. dist., and raise a  
mound of earth 4 ft. base 2 ft  
high N. of cor.
- Mountainous land with S. slope  
rocky and loose shifting sandy  
slopes. soil rocky & sandy. sub soil  
sandy. Undergrowth of chaparral  
Some scattering cedar & pinon

Retracement & Resurvey 4<sup>th</sup> Standard Parallel South., R. 2.  
Chains

	S. $89^{\circ}59'$ W., resurveying on S. bdy. sec. 31. Over mountainous land thru scattering cedar & juniper.
1.00	Top of a high sandy ridge, bears N.E. and S.W. Descended steep NW. slope, 250 ft. to Bottom of canyon & wash, 10 lks. wide, course SW. Asc. over sandstone bedrock.
13.50	Low ridge, 125 ft. high, bears N. & S. Difference between measurement of 40.06 chs. by 2 sets of chains is 2 lks. the position of middle point.
	By 1 <sup>st</sup> set, 40.05 chs.
	By 2 <sup>nd</sup> set, 40.07 chs., the mean of which is
40.06	The standard $\frac{1}{4}$ sec. cor. hereto- fore described. Mountainous land with S. slope chaparral undergrowth, some very good bunch grass. Soil, sandy & rocky. sub-soil, sandy. Timber a few scattering cedar & juniper.

August 31: At the standard cor.  
of secs. 32 & 33 heretofore described  
I set off  $8^{\circ}46\frac{1}{2}'$  N. on the decl. arc.  
and at  $12^{\text{h}} 00^{\text{m}}$  m.l. m.t. observe  
the sun. on the meridian; the  
resulting lat. is  $39^{\circ}01\frac{3}{4}'$  M.

Hence from

East, retracing on the S. bdy. sec. 33.  
over mountainous land, ascending  
thru dense forest of scrub  
cedar & juniper.

32.00	Ridge, 150 ft. above sec. cor., bears $77^{\circ}20'W$ $\checkmark S. 20^{\circ}E$ Desc 50 ft to
38.50	Gulch, drains N. Ascend 50 ft to

Retracement & Resurvey of the 4<sup>th</sup> Standard Parallel South, R. 25 E.  
Chain

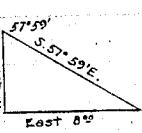
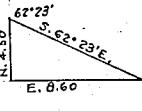
Difference of measurement of 40.03  
chs by 2 sets of chainmen is 4  
lks. position of middle point  
By 1<sup>st</sup> set, 40.01 chs.  
By 2<sup>nd</sup> set, 40.05 chs: the mean  
of which is

40.03 The standard  $\frac{1}{4}$  sec. cor. which  
is a sandstone  $12 \times 12 \times 3$  ins.  
firmly set in a mound of stone,  
marked and witnessed as  
described by the surveyor general.  
I destroy all traces of the old  
 $\frac{1}{4}$  cor. and re-establish it at the  
same point as follows.  
Set an iron post, 3 ft. long, 1 in. in  
dia., 26 ins. in the ground for  
standard  $\frac{1}{4}$  sec. cor. marked on  
brass cap S 33 $\frac{1}{4}$  on N. half, and  
raise a mound of stone 2 ft.  
base 1 $\frac{1}{2}$  ft. high N. of cor. Trees are  
within limits but all too scrubby  
to mark.

For general description see  
Book "B" of this survey  
Howard W. Miller  
U. S. Instrumentman

4<sup>th</sup> Standard Parallel South, Range 25 East.

ctavis

- From the standard 1/4 Sec. cor. on the S. bdy. sec. 33 heretofore described I run East, on a random line along the S. bdy. of the township setting temp. survey 1/4 and sec. cors. at intervals of 40 chs.
- 21.00 I make careful & extended search for witness cor. to standard cor. of secs. 33 & 34 but am unable to find any trace of it.
- 
- This point on top of rock wall, 200 ft high down which I cannot chain; set a flag at foot of ledges; measure a base north 5 chs. to a point, from which the flag bears S. 57° 59' E., therefore, tan 57° 59' x base, or  $1.599 \times 5$  gives 8.00 chs which added to 21.00 chs to base of bluffs.
- 29.00 To right bank Grand river. At temp. measure
- 34.85 To determine the distance across, I set a flag on line, on left bank; then measure a base north 4.50 chs. to a point, from which the flag bears S. 62° 23' E. therefore tan. 62° 23' x base or  $1.91 \times 4.50$  gives 8.60 chs. which added to 34.85 gives
- 
- 43.45 To left bank Grand river. At temp. measure
- Co. August 31, 1910
- Sept 2: At 7 h a.m. l.m.t. I set off  $39^{\circ} 0' 42''$  N. on the lat arc:  $8^{\circ} 09' N.$  on the decl. arc. and determine a meridian with the solar at my station on the left bank of Grand river.
- Thence I continue East.
- 194.65 To top of rock wall and ledges 3 to 400 ft high, down which I cannot chain: set a flag on line at base of ledges and also one at my

chains

1<sup>st</sup> Standard Parallel South, Range 25 E.

station on top of cliffs. From my flag at base cliffs measure a base S. 11° chs to a point, from which the flag on top bears N<sup>o</sup> 66° 40' W., therefore tan. 66° 40' x base or 2.318 x 11 gives 25.50 + 194.65 =

220.45 To base cliffs

280.00 Set temporary cor. of T 20 S., R 25  
+ 26 E.

From this, <sup>temporary</sup> temp cor. I flag north along the east bdy. of tp 20 S., R 25 E and fall 1.85 chs. W. of the cor. of secs. 19, 24, 25 & 30 which is a sandstone 17 x 17 x 4 ins. above ground firmly set and marked and witnessed as described by the surveyor general.

I return to the temporary cor. of T 20 S., R 25 & 26 E. and run East 185 chs. point for cor T 20 S., R 25 & 26 E. This point falls on solid rock. I mark + for exact cor. point and at 8 chs. east of true cor. point.

Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins in the ground and mound of stone for witness cor. to T 20 S., R 25 & 26 E, mkd. on brass cap.

T 20 S. on N half.  
R 25 E S 36 in NW.

R 26 E S 31 in NE with WC.

raise a mound of stone 2 ft base, 2 ft. high N. of cor.

Hence I run

West, on S bdy sec. 36. counting distances from true cor. of point over rocky mountainous land facing N.

5.00 Little Dolores river, 75 lks. wide, some

14<sup>th</sup> Standard Parallel South, Range 25 East  
chains

		water, course S.80°W.
		Hence over land sloping S.
18.00		Same river, 75 lks wide, course NW.
		Hence up steep rocky spur. 100 ft.
27.15		Spur, projects N.
		Hence over land facing almost N.
		Difference between measurement of 40.00 chs. by 2 sets of chainmen is 8 lks. position of middle point
		By 1 <sup>st</sup> set, 39.96 chs.
		By 2 <sup>nd</sup> set, 40.04 chs. the mean of which is
40.00		Set an iron post, 3 ft. long, 1 in. dia., 26 ins. in the ground for standard $\frac{1}{4}$ sec. cor. mkd. on brass cap. S.36 $\frac{1}{4}$ on N. half, from which
		A cedar, 20 ins. diam., bears N.11°W.
		60 lks. dist. marked
		S C $\frac{1}{4}$ S 36 BT
		A cedar, 12 ins. diam., bears south
		57 lks. dist. marked
		S C $\frac{1}{4}$ S 1 BT.
43.00		Spur projects N.
		Begun descent into little Dolores river canyon.
55.00		Little Dolores river, 50 lks wide 27.5 ft. below spur, course SW.
		Begun ascent towards high mesa.
61.90		Point of triangulation and base of high cliff, bears NE. & SW.
80.00		Point for sec. cor. among cliffs cor. cannot be set.
87.20		Top of high mesa, 450 ft above little Dolores river, bears NE & SW which thence in a westerly direction Difference between measurement of 87.20 chs. by 2 sets of chainmen is 12 lks. position of middle point.

chains

4<sup>th</sup> Standard Parallel South, Range 25 E

87.20

By 1<sup>st</sup> set 87.14 chs.  
By 2<sup>nd</sup> set 87.26 chs. the mean  
of which is  
Set an iron post, 3 ft. long, 3 in. in  
dia., 24 in. in a mound of  
earth and stone for witness  
cor. to standard cor. of secs. 35  
& 36, marked on brass cap  
T 20 S R 25 E S 35 S 36 on N. half  
with WC.  
and raise a mound of stone  
3 ft. base, 2 ft. high N. of cor.  
Land Mountainous  
Rocky N. & S. slopes into little  
valleys river. Undergrowth  
chaparral, no grass soil, rocky  
sub soil rocky. Timber cedar &  
juniper but very scrubby.

720

West, on S. bdy. sec. 35 counting  
distances from true corner point.  
Witness cor. to standard cor. of  
secs. 35 & 36 on top high mesa.  
Enter dense forest of cedar &  
juniper. Hence across south  
end of mesa.

Difference between measurement  
of 40 chs. by 2 sets of chains  
is 2 lks. position of middle  
point.

By 1<sup>st</sup> set 39.99 chs.

By 2<sup>nd</sup> set 40.01 chs. the mean  
of which is

40.00

Set an iron post, 3 ft. long, 1 in. in  
dia., 26 in. in the ground for  
standard 1/4 sec. cor. marked  
on brass cap S 35 1/4 on N half,  
and raise a mound of stone  
2 ft. base 1 1/2 ft. high N. of cor.

Pits impracticable.

Trees within limits but too

4<sup>th</sup> Standard Parallel South, Range 25 E

chains

- scrubby to mark.
- Sept. 2. At this  $\frac{1}{4}$  sec. cor. I set off  $8^{\circ} 03' 44''$  N. on the decl. arc and at 12 h. m. l. m. t. observe the sun on the meridian; the resulting lat. is  $39^{\circ} 01' 35''$  N.
- 52.10 Leave mesa bears  $77.85^{\circ}$  W. + SE  
Hence down steep rocky SW slope.  
Difference between measurement of 8000 chs. by two sets of chains is 10 chs. position of middle point  
By 1<sup>st</sup> set 79.95 chs.  
By 2<sup>nd</sup> set 80.05 chs. the mean of which is
- 80.00 Point for standard cor. of secs. 34+35  
falls on solid sandstone rock with steep S. slope. I am unable to set it permanently within 10 chs. distance on line. Mark + for exact cor. point and chain N. 435 chs. on top of rocky ridge.  
Set an iron post, 3 ft. long, 3 in. dia., 24 in. in a mound of stone for witness cor. of standard cor. of secs. 34+35 marked on brass cap.
- T 20 S R 25 E on N. half  
S 34 in "W. half  
S 35 in E " with WC.
- and raise a mound of stone 2 ft. base,  $1\frac{1}{2}$  ft. high N. of cor. Post impracticable  
land, mountainous.
- E. 720 chs. steep rocky SE face mesa  
rocky soil. Next 45 chs. N slope  
level mesa, dense undergrowth no grass. W 28 chs. very rocky SW slope mesa. rocky soil for mile. Timber dense cedar +

4<sup>th</sup> Standard Parallel South Range 25 East  
chain.

Pinion.

West, on S. bdy. sec. 34 from true cor. point.

over mountainous land sloping nearly S.

20.00 Rocky ridge, bears SW. +  $77.80^{\circ}$  E.

Desc. steep SW slope over series of ledges.

32.00 Hence over land sloping S.

Difference between measurement of 40 chs. by two sets of chainmen is 6 chs. position of middle point

By 1<sup>st</sup> set 39.97 chs.

By 2<sup>nd</sup> set 40.03 chs; the mean of which is

40.00 Set an iron post, 3 ft. long, 1 in. in dia., 26 in. in the ground for standard.  $\frac{1}{4}$  sec. cor. marked on brass cap S 34  $\frac{1}{4}$  on N. half and raise a mound of stone 2 ft. base  $1\frac{1}{2}$  ft. high. N. of cor. Pits impracticable

54.00 south point of high rock spur. ledges, 150 ft. high, bears NE.

Begun descent over land facing W. towards Grand river.

78.40 Cliffbank of the Grand river

Set an iron post, 3 ft. long, 3 in. in dia. for meander cor. on S. bdy. sec. 34 marked on brass cap

T 20 S R 25 E S 34 MC.

and raise a mound of stone 2 ft. base  $1\frac{1}{2}$  ft. high E. of cor.

Pits impracticable.

80.00 Point for standard cor. of secs.

33 + 34 in Grand river cor. not set

Land mountainous

E. 54 chs. mountainous S. slope towards <sup>little</sup> Dolores river some undergrowth, soil sandstone

chains

4<sup>th</sup> Standard Parallel South, Range 25 E.

		bed rock & rocky. sub-soil rocky W. 2 1/2 chs. W. slope to Grande river gravelly & rocky soil. sub soil rocky. Timber scrub cedar & Juniper.
7.00		West, on S. bdy sec. 33 continuing distances from tree cor. rod, etc. Right bank Grande river. Set an iron post 3 ft. long, 3 in. in dia., 2 1/2 in. in the ground for meander cor. on S. bdy sec 33. marked on brass cap. T 20 S R 25 E S 33 M.C. and raise a mound of stone 2 ft. base 1 1/2 ft. high E. of cor. Pits impracticable Begin ascent over rocky ground sloping SE.
12.85		Base of high ledges and point of triangulation.
20.85		Top of ridge and high cliffs, 450 ft. above grande river, bears N + S. Enter dense cedar & Juniper. Descend.
41.85		Difference between measurement of 41.85 chs. by 2 sets of chainmen is 6 lks. position of middle point By 1 <sup>st</sup> set 41.82 chs. By 2 <sup>nd</sup> set 41.88 chs. the mean of which is The standard 1/4 sec. cor. here- tofore described. Land, mountainous E. 21 chs. steep rocky SE. slope. no undergrowth. no grass. Soil, rocky, sub-soil, rocky. W. 21 chs. gradual W. slope. Chaparral undergrowth. no grass. Sandy & rocky soil. sub-soil rocky.

14<sup>th</sup> Standard Parallel South, Range 25 East  
chains

Dense cedar + juniper on W 21 chs.

Sept 2 1910

For general description see  
book P. of this survey

Howard Miller  
U.S. Instrument man

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**Page**

Fourth Standard Parallel South, through Range  
Chains

Survey commenced September 6,  
1910 and executed with a W. & L.  
E. Surley solar compass, described  
in book "A" of this survey.

I begin at the witness corner to  
standard corner of township  
20 South., ranges 25 & 26 E. which  
I established September 3, 1910.  
Latitude  $39^{\circ} 0' 42''$  N., longitude  
 $109^{\circ} 0' 31''$  W.

In order to test the solar apparatus  
by comparing the results of  
observations on the sun, made  
during a.m. & p.m. hours, with  
a true meridian determined  
by observations on Polaris, I  
proceed as follows.

At  $4^{\text{h}} 39^{\text{m}}$ . p.m. l.m.t. I set  
off  $39^{\circ} 0' 42''$  N. on the latitude  
arc;  $6^{\circ} 32'$  N. on the decl. arc  
and mark a meridian thus  
determined with the solar, by  
a cross on a stone firmly set in  
the ground, 5 chs. N. of my  
station.

At  $8^{\text{h}} 36^{\text{m}}$  p.m. l.m.t. I observe  
Polaris at eastern elongation, in  
accordance with instructions  
in the Manual, and mark the  
line thus determined by a  
tack driven in a wooden peg  
set in the ground, 5 chs. north  
of my station.

September, 6, 1910

---

September 7: At 7 a.m., I lay off  
the azimuth of Polaris,  $1^{\circ} 30' 6''$  to  
the west and find that this  
meridian agrees with the solar  
meridian determined September 6.

Fourth Standard Parallel South, through Range 26 E.  
chains

At  $\eta^b$  58 m. a.m. l.m.t. I set off  
 $39^{\circ} 01' 42'' N.$  on the latitude arc,  
 $6^{\circ} 16.5' N.$  on the decl. arc, and  
determine a meridian with the  
solar. This meridian agrees  
with solar & Polaris meridians  
I therefore conclude that the  
instrument is in adjustment.  
The magnetic bearing of the true  
meridian at 8.15 a.m., is  $N. 15^{\circ} 35' W.$   
the angle thus determined gives  
the magnetic decl.  $15^{\circ} 35'$  east.  
From the witness cor. to the  
standard corner, above described  
I run.

East, on S. bdy. sec. 31. counting  
distances from true corner  
point.

Over mountainous land

Witness cor.

Point of spur, projects N.

Rail fence, bears N. & S.

Descend land facing NE.

Difference between measurement  
of 40.00 chs., by two sets of chainmen,  
is 8 eks.; position of middle point

By 1<sup>st</sup> set. 39.96 chs.

By 2<sup>nd</sup> set. 40.04 chs.; the mean  
of which is

Set an iron post, 3 ft. long, 1 in. dia., 26 ins. in the ground for  
standard  $\frac{1}{4}$  sec. cor. marked on  
brass cap  $\delta 31\frac{1}{4}$  on N. half,  
raise a mound of stone & ft.  
base,  $1\frac{1}{2}$  ft. high N. of corner.  
Pits impracticable

Ascend.

Spur, at base of 75 ft. ledge.  
projects N.

Descend.

Fourth Standard Parallel South through R. 26 E.  
Chano.

68.50	Wash in hollow, 50 lks. wide, course NW. Ascend 200 ft. over ledges facing W. to base of sharp rocky spur and ledge bears N. and S.
78.00	Difference between measurement of 80.00 chs., by 2 sets of chainmen is 12 lks.; position of middle point By 1st set 79.94 chs. By 2nd. set 80.06 chs. the mean of which, 80.00 chs. falls on ledges where cor. cannot be set, therefore, I perpetuate cor. on solid ground as follows: Set an iron post, 3 ft. long, 3 ins. in dia, 24 ins. in the ground for witness cor. to the standard cor. of secs. 31 and 32 marked on brass cap, Tao SR 26 E S 31 S 32 on N. Half with W C to the east, raise a mound of stone, 2 ft. base, 1 1/2 ft high N. of corner. Post impracticable.
80.00	Point for standard cor. of secs. 31 and 32. No cor. set. Mountainous land with a rocky north slope from high mesa to Little Dolores River. Very little under- growth. No grass. Soil, rocky and sandy at th. rate. Timber, some scrub cedar and juniper.
1.00	East, on S. bdy. of sec. 32, count- ing distances from true corner point. Top of rocky spur, 50 ft. above sec. Cor. projects N. Descend.
6.00	Base of spur, bears N. and S.

Fourth Standard Parallel south, through P. 16 E  
chains

	Enter dense cedar and piñon timber, bears N. and S.
19.80	Wash, 20 lks. wide, coarse NW.
39.00	Ridge, bears N. and S.  Difference between measurement of 40.00 chs., by 2 sets of chainmen is 6 lks., position of middle point By 1st. set 39.97 chs. By 2nd. set 40.03 chs, the mean of which is
100.00	Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for standard $\frac{1}{4}$ sec. cor., marked on brass cap S $32\frac{1}{4}^{\circ}$ on N. half, from which A cedar, 7 ins. in diam, bears S. $29^{\circ}$ E., 32 lks dist, marked S C $\frac{1}{4}$ S 5 BT
	A cedar, 9 ins. diam, bears N. $24\frac{1}{4}^{\circ}$ W., 9 lks. dist, marked S C $\frac{1}{4}$ S 32 BT.
49.00	Boulder, 25 ft. high on line.
64.10	Road, bears N. $80^{\circ}$ W. and S. $80^{\circ}$ E.
65.40	Fence, bears NE. and SW.
66.75	Rocky south point of spur, projects S Leave timber bears S. and N. $80^{\circ}$ W. Hence descend over open land sloping E.  Difference between measurement of 78.33 chs. by 2 sets of chainmen is 1 lks.: position of middle point By 1st set - 78.31 chs. By 2nd. set 78.35 chs, the mean of which is
78.33	Intersect the Utah - Colorado state boundary line 11.61 chs. N. $0^{\circ}$ $17^{\circ}$ E. of the 139 th. mile corner. which is a sandstone 18 x 12 x 1

Fourth Standard Parallel South, through Range 26 East  
Cham.

is above ground, firmly set, and  
marked and witnessed as  
described by the surveyor general.  
Set an iron post, 3 ft. long, 3 in.  
dia., 24 in. in the ground for  
standard Closing Cor. of Tps. 20 &  
21 S., R. 26 E. Marked on brass  
cap.

C C C on E half

U on W half.

T 20 S R 26 E S 32 in NW. and

T 21 S R 26 E S 5 in SW.

quadrant. dig pits 30 x 24 x 12  
in. crosswise on each line

N. & S. 4 ft. and W. of post 8 ft  
dist., raise a mound of  
earth 5 ft. base 2 $\frac{1}{2}$  ft. high W  
of cor.

Land, mountainous

W 66.25 chs. rocky N. slope  
some undergrowth sage brush  
Soil rocky and gravelly. sub-soil  
gravelly & sandy. E 12 chs. gentle  
S. slope. dense undergrowth of  
sage brush. Soil, sandy loam  
and some rocks sub-soil sandy  
loam: 1 $\frac{1}{2}$  rate.

Timber scrub cedar & Juniper  
on <sup>west</sup> 66.25 chs

Sept 7; At this closing cor. I set  
off 6' 12.2" N. on the decl. arc: and  
at 11<sup>h</sup> 58<sup>m</sup>. a.m. l.m.t. observe  
the sun on the meridian; the  
resulting latitude is 39° 02' N.

For general description see  
book "J" of this survey.

Howard Wm. Miller  
U.S. Instrumentman

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## FINAL OATHS OF DEPUTY SURVEYOR AND HIS ASSISTANTS.

## LIST OF NAMES.

A list of the names of the individuals employed by Howard W. Miller  
Instrumentman, United States Deputy Surveyor, to assist in running, measuring, and  
marking the lines and corners described in the foregoing field notes of the survey of Retracement,  
re-survey & survey of the 4<sup>th</sup> standard Parallel south, three ranges  
25 + 26 East of the S.L.B. & M., Utah,  
showing the respective capacities in which they acted:

Fred Wright , Chainman.  
Ben Egle , Chainman.  
Karl Rothermund , Chainman.  
Edward Jones , Chainman.  
Roscoe Hallett , Mountman.  
Roscoe Hallett , Mountman.  
Roscoe Hallett , Axman.  
Roscoe Hallett , Flagman.

## FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted Howard W. Miller  
Instrumentman,

United States Deputy Surveyor, in surveying all  
those parts or portions of the retracements, re-surveys and  
survey of the fourth standard Parallel south  
through ranges 25 + 26 east

of the Rail  
Lake Base meridian, State of Utah, which are represented  
in the foregoing field notes as having been surveyed by him and under his direction; and that said survey  
has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the  
corner monuments established, according to the instructions furnished by the United States Surveyor  
General for Utah

Fred Wright , Chainman.  
Ben Egle , Chainman.  
Karl Rothermund , Mountman.  
Edward Jones , Mountman.  
Roscoe Hallett , Mountman.  
Roscoe Hallett , Axman.  
Roscoe Hallett , Flagman.

Subscribed and sworn to before me this 7<sup>th</sup>  
day of September, 1900.

COOOGOG  
G SEAL G  
OOOGOG

Howard W. Miller  
M.S. Instrumentman

Book No. 38

FINAL OATH OF UNITED STATES DEPUTY SURVEYOR.

Transitman

I, Howard W. Miller, United States Deputy Surveyor, Transitman,  
solemnly swear that, in pursuance of special instructions received from Thomas Hull,  
United States Surveyor General for U t a h, bearing date of the  
6 day of August, 1910, 190X, I have well, faithfully, and truly, in my own proper person, and in strict conformity with the instructions furnished by the United States Surveyor General for U t a h, the Manual of Surveying Instructions, and the laws of the United States, surveyed all those parts or portions of retracement, resurvey, and survey of the Fourth Standard Parallel South, through Ranges 24, 25, and 26 East.

of the Salt Lake Base

and in books "A" & "E" State of Utah, which are represented in the foregoing field notes as having been surveyed by me, and under my direction; and I do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the Manual of Surveying Instructions, and the special written instructions of the United States Surveyor General for U t a h, and in the specific manner described in the field notes, and that the foregoing are the original field notes of such survey.

Howard W. Miller

United States Deputy Surveyor

United States Transitman

Subscribed by said Howard W. Miller, and sworn to before me,

this 23 day of November, 1911, 190X



Thomas Hull  
U.S. Surveyor-General

for Utah.

APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Salt Lake City, Utah, June 25, 1913, 190X

The foregoing field notes of the survey of retracement, resurvey, and survey of the Fourth Standard Parallel South, through Ranges 25 and 26 East of the Salt Lake Base and Meridian, Utah,

executed by Howard W. Miller,  
under his contract No. A, dated August 6, 1910, 190X, having been critically examined, and the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

Thomas Hull  
United States Surveyor General

I certify that the foregoing transcript of the field notes of the above-described surveys in \_\_\_\_\_, has been correctly copied from the original notes on file in this office.

United States Surveyor General

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MAR 9 1911

Book "H".

M.M.C.

## FIELD NOTES

OF THE SURVEY OF THE and Retracement of the

East Boundary T. 20 S., R. 25 E.

of the Salt Lake Base and Meridian, Utah

AS SURVEYED BY

Howard Wm. Miller, United States Deputy Surveyor,  
Transitman  
assignment  
Under his Contract No. 41, U.S.P., dated August 6, 1910

Survey commenced Sept. 3, 1910

Survey completed Sept. 3, 1910

6-111

## NAMES AND DUTIES OF ASSISTANTS.

Fred Wright, chairman

Karl Rothermund; chairman

Roscoe Hallett, moundsman

Edward Jones, al'man

Ben Egle, flagman

BOOK A-378

INDEX DIAGRAM.

*Township 20 South, Range 25 East.*

6	5	4	3	2	1
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19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

*Meanders Page.....*

## PRELIMINARY OATHS OF ASSISTANTS.

WE, Fred Wright and Karl Rothermund  
do solemnly swear that we will well and faithfully execute the duties of chainmen; that we will level the  
chain upon even and uneven ground, and plumb the tally pins, either by sticking or dropping the same; that  
we will report the true distances to all notable objects, and the true lengths of all lines that we assist  
measuring, to the best of our skill and ability, and in accordance with instructions given us, in the survey  
retracement of East boundary of township 20 south Range 25  
of the S.L.B. & M., Utah,

Fred Wright

, Chainm

Karl Rothermund

, Chainm

Subscribed and sworn to before me this 2<sup>nd</sup>  
day of September, 1910



Howard W. Miller

U.S. Instrumentman

WE, Roscoe Hallett and

do solemnly swear that we will well and truly perform the duties of moundmen in the establishment  
of corners, according to the instructions given us, to the best of our skill and ability, in the survey  
retracement of East boundary Township 20 south, range 25 east  
of the S.L.B. & M., Utah.

Roscoe Hallett

, Moundm

, Moundm

Subscribed and sworn to before me this 2<sup>nd</sup>  
day of September, 1910



Howard W. Miller

U.S. Instrumentman

WE, Edward Jones and

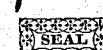
do solemnly swear that we will well and truly perform the duties of axmen in the establishment of com  
and other duties, according to instructions given us, to the best of our skill and ability, in the survey  
retracement of East boundary Township 20 south, range 25 east  
of the S.L.B. & M., Utah.

Edward Jones

; Ax

, Ax

Subscribed and sworn to before me this 2<sup>nd</sup>  
day of September, 1910



Howard W. Miller

U.S. Instrumentman

I, Ben Egle

, do solemnly swear that I will well and  
perform the duties of flagman according to instructions given me, to the best of my skill and ability,  
and retracement of the  
survey of East boundary Township 20 south range 25 east  
of the S.L.B. & M., Utah.

Ben Egle

, Flag

Subscribed and sworn to before me this 2<sup>nd</sup>  
day of September, 1910



Howard W. Miller

U.S. Instrumentman

claims

East Boundary T. 20 S., R. 25 E.

Survey commenced Sept 2, 1910 & executed with a W. & L. E. Bentley solar compass no. 1043. For description & test of instrument see book "A" of this survey.

I examine the adjustments of the compass, and correct the level and collimation errors, then, to test the solar apparatus, by comparing its indications, resulting from solar observations made during a.m. & p.m. hours by a meridian determined by observations on Polaris, I proceed as follows.

At my camp which is approximately 1 mile east and a half north of the standard cor. of T. 20 S., R. 25 & 26 E.; latitude  $39^{\circ} 02' 08''$  N.; longitude  $109^{\circ} 07' 31''$  W.; I set off  $39^{\circ} 02' N.$  on the lat. arc.  $8^{\circ} 00' 7''$  on the decl. arc. and at  $5^{\text{h}} 0\text{m. l. m. t.}$ , determine with the solar a meridian, and mark a point thereof on a stone firmly set in the ground, 5 chs N. of my station.

At  $8^{\text{h}} 51\frac{1}{2}\text{m. p. m. l. m. t.}$  I observe Polaris at eastern elongation, in accordance with the Manual of Instructions, and mark a point in the line thus determined, by a peg driven in the ground, 5 chs. N. of my station.

September 2, 1910

Sept 3: At  $6^{\text{h}} 45^{\text{m}}$  a.m. l.m.t., I lay off the azimuth of Polaris,  $1^{\circ} 30' 6''$  to the W., and mark the meridian thus determined, by cutting a small groove in the stone set

## East Boundary T. 20 S. R. 25 E.

claims

Sept 2. on which the meridian falls 0.5 ins. east of the mark determined by the solar.

At 7 h. 30<sup>m</sup>. am. l. m. t. I set off, 39° 02' N. on the lat. arc, 7° 44' N. on the decl. arc, and mark a point in the meridian determined with the solar, by a cross on a stone already set 5 chs. N. of my station; this meridian falls 0.4 ins. east of the meridian established by Polaris observation.

The solar apparatus by P.m and a.m observations, defines positions for meridians, respectively 0' 26" West and 0' 21" East of the meridian established by Polaris observations, therefore, I conclude that the adjustments of the instrument are satisfactory.

The magnetic bearing of the true meridian, at 8 am., is 15° 35' W., the angle thus determined gives the magnetic declination 15° 35' E.

Sept 3: 1910

At 9<sup>h</sup>. a.m. l.m.t. I set off 39° 01' N. on the lat. arc; 7° 44' N. on the decl. arc. and determine a meridian with the solar at the temp. cor. point. of standard cor. of T. 20 S., R. 25 + 2.6 E. here-to fore described.

Hence I run

North on a random line along the E. bdy. of the tp. setting of temporary 1/4 sec. + sec. cor. at intervals of 40 chs., and at 160.66 chs. fall 18.8 chs. W. of the cor. of secs. 19, 24, 25 + 26. for description of cor. see line bet. secs. 19 + 24. page 5.

As my falling is out of limits

East Boundary T. 20 S. R. 25 E.

chains

	I begin at the cor. of secs. 19, 24, 25 & 30. Hence from South, on true line bet. secs. 25 & 30 Ascend over NE. slope of mesa thru forest of scrub cedar & juniper and undergrowth of chaparral.
40.66	Set an iron post, 3 ft. long, 1 in in dia., 26 ins in the ground for $\frac{1}{4}$ sec., cor. marked on brass cap, $\frac{1}{4}S 25$ on W. half and $S 30$ on E. half; raise a mound of stone 2 ft. base $1\frac{1}{2}$ ft. high W. of cor. Pits impracticable Trees within limits in both secs. but too scrubby to mark. Begin steep ascent.
55.95	Top of rim of mesa + ledge 50 ft. high, 500 ft. above sec. cor. Bears NW. + SE.
69.70	Gradually ascend over mesa top Ridge, bears E. + W. descend.
80.66	Set an iron post, 3 ft. long, 3 ins. dia.; 24 ins. in the ground and mound of stone for cor. of secs. 25, 30, 31 & 36 marked on brass cap.
	T. 20 S in N. half R 25 E S 25 in NW. R 26 E S 30 in NE., S 31 in SE., and S 36 in SW. quadrant, from which. A juniper, 15 ins. diam., bears $7.38\frac{1}{2}^{\circ}$ E. 368 lbs. dist. marked T 20 S R 26 E S 30 BT. A cedar, 8 ins. diam., bears $7.24\frac{3}{4}^{\circ}$ W., 129 lbs. dist. marked T 20 S R 25 E S 25 BT. A juniper, 10 ins. diam., bears $5.4\frac{3}{4}^{\circ}$ E.

East Boundary T. 20 S., R. 25 E.

chain

81 lks. dist. marked

T 20 S R 26 E S 31 BT

a pinon, 6 ms. diam., bears S. 83° W.

95 lks. dist. marked

T 20 S R 25 E, S 36 BT.

Land, mountainous.

N. 69 chs. NE. slope mountain some very steep land. rocky soil, sub-soil rocky + clay. S 11.66 chs. S. slope of ridge on mesa. clay soil with decayed vegetation, sub. soil clay and gravel. sandstone bedrock at 6 to 8 ft. Undergrowth chaparral. Timber, scrub cedar + pinon

South, bet secs. 31 + 36.

Descend over mesa top thru forest cedar + pinon + undergrowth of chaparral.

8.60 Wash, 10 lks. wide, course S. 70° W.  
asc 50 ft.

24.00 Ridge, bears E. + W. Descend  
Leave dense timber E & W.  
34.00 To S side mesa and high ledges.  
37.66 bears NE + S. 60° W. The  $\frac{1}{4}$  sec. cor  
will fall on ledges; therefore  
Set an iron post, 3 ft. long, 1 in. in  
dia. 26 ms. in the ground and  
mound of stone for witness cor  
to the  $\frac{1}{4}$  sec. cor. marked on  
brass cap

T 20 S on N half

R 26 E S 31 on E half

R 25 E S 36 on W half

WC  $\frac{1}{4}$

and raise a mound of stone  
2 ft. base,  $1\frac{1}{2}$  ft. high W. of cor.

Pts impracticable

Here precipitous S. face of mesa.

40.00 Point for  $\frac{1}{4}$  sec. cor. on solid

East Boundary T. 20 S., R. 25 E.

Chains	
	ledge.
50.00	Base of Mesa, bears N.E. and S.W. Continue gradual descent towards little Molores River.
X	
72.00	Descend abruptly into canyon.
77.50	Bottom of canyon and Little Molores river, 75 lks. wide, some water, 675 ft. below mesa, course S.W.
	Ascend
80.00	The true point for standard cor. of T. 20 S., Rs. 25 and 26 E. heretofore described. Land mountainous N. 37' che. rolling mesa draining W. Undergrowth chaparral some grass. Soil, decayed vegetation sand clay. Sub-soil, sandy, bed rock 6 to 8 ft. from surface. S. 47 ch. rocky south slope of mesa, ledges on N. 5 che., thence more gradual slope to Little Molores River. Soil, rocky; 4 <sup>th</sup> rate, subsoil, rocky, Timber, scrub cedar and pinon. Sept. 3: At this cor. I set off 7° 41' S., on the decl. arc; and at 12 <sup>h</sup> m. l.m.t., observe the sun on the meridian; the resulting lat. is 39° 02' N.
	Sept. 6: 1910: From the cor. of secs. 19, 24, 25 & 30, which is a sandstone 20 x 17 x 4 ins. above ground, firmly set, and mkd and witnessed as described by the Surveyor General. I run
4004	North, ret racing line bet. secs 19 + 24. The 1/4 sec. cor., which is a sandstone 12 x 8 x 5 ins. above

Retacement of the E. bdy of T 40 S. R 25 E

chain

ground, firmly set and marked and witnessed as described by the Surveyor General.

The course of this line is north and the distance is 4004 chs. From the  $\frac{1}{4}$  sec. cor. I continue North.

10.04 The cor. of secs. 13, 18, 19 + 24 which is a sandstone,  $18 \times 13 \times 4$  ins above ground, firmly set, and marked and witnessed as described by the Surveyor General.

The true course of this line is north, and the distance is 4004 chs.

Sept 6, 1910

For general description see book "G." of this survey.

Howard W. Miller

U. S. Surveyor

## FINAL OATHS OF DEPUTY SURVEYOR AND HIS ASSISTANTS.

## LIST OF NAMES.

A list of the names of the individuals employed by

Howard W. Miller  
Instrumentman

United States Deputy Surveyor, to assist in running, measuring, a

marking the lines and corners described in the foregoing field notes of the survey and returning

- East boundary township 20 south, range 25 east  
S.S. 10 + 00' W.M. showing the respective capacities in which they acted:

Fred Wright

, Chainman

Karl Rothermund

, Chainman

Roscoe Hallett

, Moundman

Edward Jones

, Moundman

Ben Eagle

, Axman.

, Flagman.

## FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted

Howard W. Miller

Instrumentman

United States Deputy Surveyor, in surveying

those parts or portions of the East boundary of township  
20 south, range 25 east

of the Salt

Lake Base + meridian, State of Utah, which are represented  
in the foregoing field notes as having been surveyed by him and under his direction; and that said survey  
has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the  
corner monuments established, according to the instructions furnished by the United States Surveyor

General for Utah

Fred Wright

, Chainman

Karl Rothermund

, Chainman

Roscoe Hallett

, Moundman

Edward Jones

, Moundman

Ben Eagle

, Axman.

, Axman.

, Flagman.

Subscribed and sworn to before me this 3<sup>rd</sup>  
day of September, 190 }

Howard W. Miller  
U. S. Instrumentman



## FINAL OATH OF UNITED STATES DEPUTY SURVEYOR.

I, \_\_\_\_\_, United States Deputy Surveyor, do solemnly swear that, in pursuance of a contract received from \_\_\_\_\_, bearing date of the \_\_\_\_\_, I have well, faithfully, and truly, in my own proper person, and in strict conformity with the instructions furnished by the United States Surveyor General for \_\_\_\_\_, the Manual of Surveying Instructions, and the laws of the United States, surveyed all those parts or portions of \_\_\_\_\_.

For first oath of transcription see book 547. 25 S., R. 26 E.

of the \_\_\_\_\_ meridian, in the \_\_\_\_\_ of \_\_\_\_\_, which are represented in the foregoing field notes as having been surveyed by me, and under my direction; and I do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the Manual of Surveying Instructions, and the special written instructions of the United States Surveyor General for \_\_\_\_\_ and in the specific manner described in the field notes, and that the foregoing are the original field notes of such survey.

United States Deputy Surveyor.

Subscribed by said \_\_\_\_\_, and sworn to before me,

this \_\_\_\_\_ day of \_\_\_\_\_, 1910.

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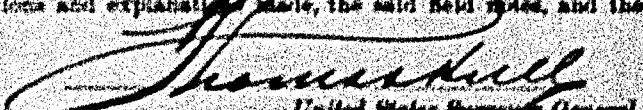
## APPROVAL.

## OFFICE OF THE UNITED STATES SURVEYOR GENERAL

Salt Lake City, Utah, June 26, 1913~~max~~

The foregoing field notes of the survey of \_\_\_\_\_ the East Boundary of Township No. 20 South, Range No. 25 East of the Salt Lake Base and Meridian, Utah,

submitted by Hazard Miller, under his ~~special~~ instructions, dated August 6, 1910, having been critically examined, and the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

  
James D. Bell  
United States Surveyor General

I verify that the foregoing transcript of the field notes of the above-described surveys is \_\_\_\_\_, has been correctly copied from the original notes on file in this office.

United States Surveyor General

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MAR 9 1911

## Book "G"

BOOK A-378

## FIELD NOTES

H.S.B.

OF THE SURVEY OF THE

Subdivisions, Meanders, andRetracements of subdivisionsTownship 20 south, Range 25 Eastof the Salt Lake Base and Meridian, Utah

AS SURVEYED BY

Howard D. MillerTransitman, United States Deputy Surveyor,assignmentUnder his Contract No. 4, Utah, dated August 6 1910Survey commenced September 3 1910Survey completed September 16 1910

## NAMES AND DUTIES OF ASSISTANTS.

Hed Wright, chairman  
Karl Rothermund, chairman  
Roscoe Hallett, mowndman  
Edward Jones, attorney  
Ben Egle, flagman

BOOK A-378

INDEX DIAGRAM.

Township 20 South, Range 25 East

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Meanders Pages 25 to 31

PRELIMINARY OATHS OF ASSISTANTS.

WE, Fred Wright and Karl Rothermund  
do solemnly swear that we will well and faithfully execute the duties of chainmen; that we will  
chain upon even and uneven ground, and plumb the tally pins, either by sticking or dropping the  
we will report the true distances to all notable objects, and the true lengths of all lines that we  
measuring, to the best of our skill and ability, and in accordance with instructions given us, in the  
subdivisions, meanders and retracements of T. 20  
S.L.B. & M., Utah.

Fred Wright

Karl Rothermund

Subscribed and sworn to before me this 3<sup>rd</sup>  
day of September, 190 }



I, Roscoe Hallett and

WE, I, Roscoe Hallett do solemnly swear that we will well and truly perform the duties of moundman in the est  
of corners, according to the instructions given us, to the best of our skill and ability, in the  
subdivisions, meanders, and retracements of T.  
S.L.B. & M., Utah.

Roscoe Hallett

Subscribed and sworn to before me this 3<sup>rd</sup>  
day of September, 190 }



I, Edward Jones and

WE, I, Edward Jones do solemnly swear that we will well and truly perform the duties of axman in the establishment  
and other duties, according to instructions given us, to the best of our skill and ability, in the  
subdivisions, meanders, retracements of T 20 S.R. 2  
S.L.B. & M., Utah.

Edward Jones

Subscribed and sworn to before me this 3<sup>rd</sup>  
day of September, 190 }



I, Ben Egle

WE, I, Ben Egle, do solemnly swear that I will w  
perform the duties of flagman according to instructions given me, to the best of my skill and  
survey of subdivisions, meanders, retracements of T 20 S.  
S.L.B. & M., Utah.

Ben Egle

Subscribed and sworn to before me this 3<sup>rd</sup>  
day of September, 190 }



chains

# Subdivisions of T.20 S., R.25 E.

Survey commenced September 3, 1910 and executed with a W. & L. E. Gurley solar compass no. 1043.

For description and test of instrument see Book "A" of this survey.

I know the instrument to be in adjustment by observations on Polaris September 2.

The line north from the standard cor. of secs. 35 & 36 on the S. bdy. of the tp. is inaccessible. I therefore begin at the witness cor. to standard cor. of secs. 35 & 36 heretofore described.

Hence I run

$7.0^{\circ}01' W.$ , on offset line  $\frac{1}{5}$  ches. Hence offset East  $7.20$  chs. to true line.

Set an iron post, 3 ft. long, 3 ins. in dia., 2 $\frac{1}{4}$  ins. in the ground, for witness cor. to standard cor. of secs. 35 & 36 marked on brass cap.

T.20 S. R.25 E. on N. half,

S. 35 on W. half

S. 36 on E. half, and  
W.C.

and raise a mound of stone 2 ft. base,  $1\frac{1}{2}$  ft. high to. of cor. Its impracticable

Hence I run

$7.0^{\circ}01' W.$ , bet. secs. 35 & 36.

Counting distances from true cor. point.

7.50 Witness corner to standard cor. of secs. 35 & 36. on top of high rock wall of mesa, 400 ft. high bears  $7.60^{\circ} E + W$ .

Subdivisions of T 20 S., R 25 E.

chains

- Hence ascend thru dense forest of cedar & Juniper and under-growth of sage brush.
- 12.00 Ridge, bears E. & W.  
Descend, 200 ft to
- 24.00 Hollow and wash, drains. W  
Ascend 100 ft to
- 39.50 Ridge, bears E. & W.  
Descend.
- 40.00 Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground and mound of stone for 1/4 sec. cor. marked on brass cap 1/4 S 35 on W. half and S 36 on E. half: from which  
A pinon, 6 ins. diam, bears S. 39 $\frac{1}{2}$  E  
25 eks. dist. marked  
1/4 S 35 BT
- A pinon, 18 ins. diam, bears N. 55 $\frac{1}{2}$  E.  
41 eks. dist. marked  
1/4 S 36 BT
- 55.00 Hollow, 17.5 ft. below ridge, course W  
Ascend 100 ft to
- 70.00 Ridge, bears E. & W.  
Descend 50 ft to
- 80.00 Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in the ground and mound of stone for cor. of secs. 25, 26, 35 & 36 marked on brass cap  
T 20 S S 26 in NW,  
R 25 E S 25 in NE,  
S 36 in SE. and  
S 35 in SW. quadrant,  
from which  
A pinon, 8 ins. diam, bears N. 53 $\frac{3}{4}$  E.  
57 eks. dist. marked  
T 20 S R 25 E S 25 BT  
A pinon, 8 ins. diam, bears S. 71 $\frac{1}{4}$  E  
114 eks. distant marked  
T 20 S R 25 E S 36 BT

Subdivisions of T. 20 S., R. 25 E.

chains

A pinon, 12 ins. diam, bears S.  $7^{\circ} W$

80 lks. dist. marked

T 20 S R 25 E S 35 BT

A pinon 14 ins. diam, bears N.  $5^{\circ} \frac{1}{2} W$ .

58 lks. dist. marked

T 20 S R 25 E S 26 BT

Land, mountainous

S 7.50 chs. rock ledges facing S.

N 72.50 chs. rolling mountainous

mesa top draining W. Under-growth, sage brush, soil, sandy & decayed vegetation and rocky. Sub-soil, bed rock at 2 to 3 ft.

Timber dense cedar + pinon

September 3, 1910

Sept 5: At 7<sup>h</sup> 29<sup>m</sup>. a. m. I. m. t. I set off  $39^{\circ} 02' \frac{1}{2} W$  on the lat. arc.

$7^{\circ} 02' N$ . on the decl. arc. and determine a meridian with the solar at the cor. of secs.

25.26, 35 + 36 heretofore described  
Hence from

East, on a random line bet. secs. 25 + 36

Set temp.  $\frac{1}{4}$  sec. cor.

80.08 Intersect east boundary of the tp. at the cor. of secs. 25, 30, 31 + 36 heretofore described  
Hence from

West, on true line bet. secs. 25 + 36. Over rolling mountainous land facing almost south, thru forest of cedar + pinon and undergrowth of sage and chaparral

31.50 Ledge, 50 ft. high bears N.E. + S.W.

Descended into gulch.

Bottom of gulch, 75 ft. deep, drains S.E.

Hence over land facing S.

## Subdivisions of T. 20 S., R. 25 E.

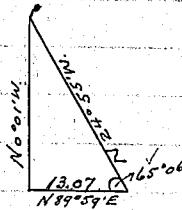
Chain

4004	Set an iron post, 3 ft. long, 1 in. dia., 26 ins. in the ground and mound of stone for $\frac{1}{4}$ sec. corner marked on brass cap $\frac{1}{4} S 25^{\circ}$ on N. half and $S 36^{\circ}$ on S half; from which a pinon, 22 ins. dia., bears $N. 19\frac{1}{4}^{\circ}$ 13.8 lks. dist. marked $\frac{1}{4} S 25^{\circ} BT$
	A pinon, 25 ins. dia., bears $S. 80^{\circ} E.$ 7.9 lks. dist. marked $\frac{1}{4} S 36^{\circ} BT$ .
41.10	Same gulch, drains NW. Hence ascend NE. slope of Spur
50.25	Spur, 125 ft above gulch, projects NW.
	Descend 100 ft to
63.70	Ravine, course NW.
	Ascend 25 ft to
67.50	Point of spur, projects N.
	Descend 50 ft to
72.00	Wash, course NW.
	Asc. 75 ft. to
77.50	Ridge, NW + SE
80.08	The cor. of secs. 25, 26, 35 + 36. E. 41 chs. mountainous land, South slope, undergrowth sage brush + chapparal. Soil sandy + rocky, sub-soil sandy, bed rock about 2 ft. W 39 chs. N slope over ridges + draws Undergrowth sage brush + chapparal Very little grass, soil rocky, sub-soil sandy, bed rock very near surface Timber cedar + juniper but very scrubby
	<hr/>
	N. $0^{\circ} 01' W.$ , bet. secs. 25 + 26 Over mountainous land, thru forest of cedar and juniper Descended over land facing N. 35 ft. to

Subdivisions of T 20 S., R 25 E.

Chain

- 3.40 Wash, at head of canyon and high ledge, course E.W.  
Ascend land facing S.
- 17.50 Ridge, 125 ft. above wash, bears E. & W.  
Desc 50 ft to.
- 23.50 Top of wall on S. side of a deep canyon, 400 to 800 ft deep, sandstone walls 200 ft. high, bears E + W.  
I am unable to chain across this canyon as the ledges are inaccessible  
To determine the distance across canyon I proceed as follows.  
Set a flag on line on N side canyon. Then measure S. 3.50 chs. in order that I might obtain a right angle. Then measure a base N: 89° 59' E., 13.07 chs. to a point from which the flag on N. side of canyon bears N: 24° 55' W., therefore tan. 65° 06' X base or  $2.1543 \times 13.07 =$   
28.16, which added to 20.00 chs makes  
(Point for 1/4 sec. cor. falls in canyon at 4000 chs)  
48.16 To north side of canyon, on top of sandstone rock wall 300 ft high, bears E. & W.  
It is impossible to get the 1/4 sec. cor. at its proper place, therefore at  
48.50 Set an iron post, 3 ft. long, 1 in. in dia., 26 ins in a mound of stone and earth for witness cor. to the 1/4 cor. mkd on brass cap  
T 20 S R 25 E on N. half., S 26 on W half, S 25 on E. half with WC 1/4, raise a mound of stone 2 ft. base 1/2 ft. high W of cor.  
It's impracticable  
Trees within limits in both secs. but all too poor to mark.
- Sept 5<sup>th</sup> At this cor. I set off  $6^{\circ} 56' 34'' \text{ N}$



chains

Subdivisions of T. 20 S., R. 25 E.

on the decl. arc; at 11<sup>57</sup> am. l. m. t.  
observe the sun on the meridian,  
the resulting lat. is a little greater  
than 39° 03' <sup>and</sup>

Ascend

70.00 Ridge, bears E. + W.

descended abruptly

80.00 Set an iron post, 3 ft. long, 2 in. in  
dia., 24 in. in the ground for  
cor. of secs. 23, 24, 25 + 26, marked  
on brass cap.

T 20 S S 23 in. NW,

R 25 E S 24 in NE,

S 25 in SE, and

S 26 in SW. quadrant,

from which

A cedar, 14 in. diam., bears N. 43½° E.

122 lks. dist. marked

T 20 S R 25 E S 24 BT

A juniper, 16 in. diam., bears S. 48° E..

121 lks. dist. marked

T 20 S R 25 E S 25 BT

A juniper, 12 in. diam., bears S. 16½° W.

56 lks. dist. marked

T 20 S R 25 E S 26 BT

A juniper, 18 in. diam., bears N. 49½° W.

32 lks. dist. marked

T 20 S R 25 E S 23 BT

Land, mountainous.

Mountainous land with a west-  
erly drain, cut by a deep canyon  
Undergrowth sage brush and  
chaparral. very little grass. Soil -  
sandy + rocky, sub-sil, sandy,  
bed rock at 2 ft.

Timber, scrub cedar + juniper.

East, on a random line, bet. secs.  
24 + 25

4000 Set temporary 1/4 sec. cor.

Subdivisions of T. 20 S. R. 25 E.

chains

80.12

Intersect the east bdy. of the tps. 66  
lks. S. of the cor. of secs. 19, 24, 25 &  
30 heretofore described.  
Set an iron post, 3 ft. long, 2 in. in  
dia., 24 ins. in the ground for  
closing cor. of secs. 24 + 25 marked  
on brass cap.

T 20 S on N half.

C.C. R 26 E. S. 19 S 30 on E half,

S 25 in SW. and

S 24 in NW quadrant,

raise a mound of stone 2 ft. base,  
1½ ft. high W. of corner.

Pits impracticable

I destroy all marks on old. corner  
pertaining to secs. 24 + 25

Hence I run

Wst. on true line bet. secs. 24 + 25  
over mountainous land facing NE  
thru dense forest of scrub cedar  
and juniper.

25.50

Began ascent of NE. slope mesa,  
bears NW. + SE.

40.06

Set an iron post, 3 ft. long, 1 in. in  
dia., 26 ins. in the ground for  
1/4 sec. cor. marked on brass cap  
1/4 S 24 on N. half, S 25 on S.

half., and raise a mound of  
stone, 2 ft. base, 1½ ft. high N.  
of cor.

Pits impracticable

Trees within limits in both secs.  
but too poor to mark.

55.00

Top of mesa and ledge 50 ft.  
high, 300 ft. above closing cor.,  
bears NW. + SE.

Hence gradually descended over  
mesa top thru dense timber.

The cor. of secs. 23, 24, 25 + 26.  
Land, mountainous

80.12

Chamis

Subdivisions of T. 20 S., R. 25 E.

East 55 chs. rocky N.E. slope of mesa.  
Undergrowth sage + chapparal.  
Soil, rocky, sub soil sandy + rocky.  
W 25 chs. W. slope of mesa.  
Soil sandy, sub soil sandy, bed  
rock very close to surface.  
Timber, scrub cedar + juniper

September 5, 1910

Sept 6. At 7<sup>h</sup> 59<sup>m</sup> am. I. m. t. I  
set off  $39^{\circ} 03' 27''$  N. on the latitude  
arc;  $16^{\circ} 39'$  N. on the decl. arc; and  
determine a meridian with the  
solar at the cor. of secs. 23, 24,  
25 + 26.

Hence true

$7.0^{\circ} 01' W.$ , on a random line bet.  
secs. 23 + 24.

40.40 Fall 1/4 elks. East of the  $\frac{1}{4}$  sec. cor.  
which is a small sandstone  
boulder  $3 \times 2 \times 2$  ft. marked  
dimly +  $\frac{1}{4}$  on W. side. no  
accessories to cor. I destroy all  
traces of the old cor. and re-estab-  
lish it at the same point, as  
follows.

Set an iron post, 3 ft. long, 1 in. in  
dia., 26 ins. in the ground and  
mound of stone for  $\frac{1}{4}$  sec. cor.  
marked on brass cap  $\frac{1}{4} S 23$   
on W. half and  $S 24$  on E. half,  
raise a mound of stone 2 ft.  
base  $1\frac{1}{2}$  ft. high W. of cor.

This falling answers to a  
correction of  $\frac{1}{2}^{\circ}$ .

Hence I run

$S. 0^{\circ} 13' E.$ , on true line bet. secs. 23 + 24  
over mountainous land thru  
forest of scrub cedar and juniper  
Ascend steep N. face of mesa

Subdivisions of T. 20 S., R. 25 E.

chains

	over ledges and boulders.
16.90	Top of mesa, 400 ft above base, bears NW. and SE. Hence gradually descend over mesa top sloping SW.
40.40	The cor. of secs. 23, 24, 25 & 26. Rugged, mountainous. N. 16.90 chs. steep slope of mesa. soil, rocky, sub-soil, rocky. S. 23.50 chs. SW. slope of mesa. undergrowth of sage brush and chapparal, some grass for grazing. Soil, rocky and sandy. sub-soil sandy. bed rock close to surface. Timber, scrub cedar and piñon.

September 12: At 8<sup>h</sup>. 27<sup>m</sup>. am. but  
I set off 39° 01' 42" N., on the lat.  
arc; 4<sup>o</sup> 22' N., on the decl. arc,  
and determine a meridian  
with the solar at the witness  
cor. of standard cor. of secs. 34  
and 35 on the S. bdg. of the top  
hereto fore described.

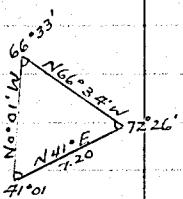
Hence I run  
7.0° 01' W., bet. secs. 34 and 35  
counting distances from true  
cor. point.

4.35	Witness cor. on top of rocky ridge bears E. and W. descend abruptly 300 ft. over ledges to
13.00	Pitlow, drains N. 30° W. Hence over W. slope of mesa near base, ascending.
28.00	Point on high mesa, projects SW. Descend rocky NW. slope.
40.00	Set an iron post, 3 ft. long, 1 in. in dia., 36 lbs. in the ground

Subdivisions of T. 20 S., R. 25 E.

chains

- for 1/4 sec. cor., marked on brass cap 1/4 S 34 on W. half and S 35 on E. half, raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor. Pits impractical hollow, and wash, 50 lks. wide, course W.
- Thence over rough rocky land thru scattering Cedars pinon.
- Begin precipitous descent into Grande river Canyon.
- 144.00 60.00 65.66 185 ft below top of canyon on left bank of Grand river.
- Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for meander cor. for fractional secs. 34 and 35, marked on brass cap.
- T 20 S R 25 E on N. half, M.C S 35 on E. half, and S 34 on W. half; and raise a mound of stone, 2 ft. base, 1 1/2 ft. high S. of cor.
- To determine the distance across river, I set a flag on line on right bank, then measure a base line N. 41° E., 7.20 chs., to a point whence flag bears N. 66° 34' W., from the flag the east end of the base bears S. 66° 34' E. by separate measurements of each angle they are found respectively  $41^{\circ} 01'$ ,  $72^{\circ} 36'$  and  $66^{\circ} 33'$  their sum being  $180^{\circ} 0'$  I compute the distance across river as follows;
- Log 7.20 + log sin  $72^{\circ} 36'$  + colog sin  $66^{\circ} 34'$   
 or Log 7.20 = .857332  
 $\log \sin 72^{\circ} 36' = 9.979260 - 10$   
 $\text{colog sin } 66^{\circ} 33' = 0.637438$   
 $\log .874030 = 7.48 \text{ chs.}$



Subdivisions of T 20 S R 25 E.

chains

73.14

65.66 + 7.48 makes  
To right bank of river  
Set an iron post, 3 ft. long, 1 in. dia., 2 1/8 in. in the ground for  
meander cor. of fractional secs.  
34 & 35, marked on brass cap

T 20 SR 25 E on N half

S 35 on E. half and

S 34 M C on W. half and  
raise a mound of stone 2 ft. base  
1 1/2 ft. high N. of cor.

Pits impracticable

Began steep rocky ascent from  
canyon

80.00

On top of canyon wall  
Set an iron post, 3 ft. long, 2 in. dia., 2 1/4 in. in the ground for  
cor. of secs. 26, 27, 31 & 35 marked  
on brass cap

T 20 S S 27 in NW.,

R 25 E S 26 in NE.,

S 35 in SE. and

S 34 in SW. quadrant,

raise a mound of stone 2 ft. base  
1 1/2 ft. high W. of corner.

Pits impracticable

Sand Mountainous

566 chs. mountainous land drain-  
ing to the Grand river, most all  
at west slope. Soil, rocky, granite  
and sandstone formation, sub-  
soil rocky, sandy. N. 7 chs. steep  
S. slope. from Grand river. soil  
rocky, sub-soil gravel and rocky  
Timber, cedars common but very  
few.

Sept. 12: At this sec. cor. I set off  
40° 19' N. on the decl. arc. and at  
11° 57' a. m. l. m. t. observe the  
sun on the meridian, the resulting

Subdivisions of T 20 SR 25 E.

days.

lat is  $39^{\circ}02\frac{1}{2}'N$ .

East, on a random line, bet.  
secs. 26 & 35

6.44 To left bank, Grand river, set temporary  
meander cor.

To determine the distance across,  
I set a flag on line on left bank,  
then measure a base north 3 chs.  
to a point, from which the flag  
bears S.  $52^{\circ}55'E$ , therefore tan  $52^{\circ}55'$   
 $\times$  base or  $1.323 \times 3 = 3.97$  chs. which  
added to 6.44 chs. makes

10.41 To left bank <sup>6 $\frac{1}{4}$</sup>  of Grand river, set  
temporary meander cor.

14.00 Set temporary  $\frac{1}{4}$  sec. cor.

80.04 Intersect N. & S. line 5 lks. S. of  
the cor. of secs. 25, 26, 35 & 36

Hence turn

S  $89^{\circ}58'W$ , on true line bet. secs.  
26 & 35.

Over mountainous land thru  
dense forest of cedar & piñon.  
Descend.

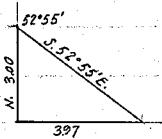
5.25 Edge of high mesa, bears S  $85W$  &  
N. 2 chs. hence West.

Descend over ledge, 8.5 ft high.

7.00 Canyon and wash, course S.  $85W$ .  
Hence over rocky land sloping S.  
along base of high ledge.

40.02 At base of mesa, 600 ft. below top  
Set an iron post, 3 ft. long, 1 in. in  
dia., 26 in. in the ground and  
mound of stone for  $\frac{1}{4}$  sec. cor.  
marked on brass cap  $\frac{1}{4} S 26$  on  
N. half and S. 35 on S. half, raise  
a mound of stone, 2 ft. base  $1\frac{1}{2}$   
ft. high. N. of cor.

Pits impracticable



Subdivisions of T. 20 S., R. 25 E.

chains

	Trees within limits in both secs. but are too poor to mark.
50.50	Begins steep descent over granite ledges into Grand river canyon.
69.68	Left bank Grand river, Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground and mound of stone for meander cor. of fractional secs. 26 + 35 marked on brass cap T 20 S R 25 E S 26 MC on N. half and S. 35 on S. half, and raise a mound of stone 3 ft. base 2 ft. high E. of cor. Posts impracticable
73.60	Right bank Grand river, Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for meander cor. of frac. secs. 26 + 35 marked on brass cap, T 20 S R 25 E S 26 on N. half and M S 35 on S. half and raise a mound of stone 2 ft. base, 1 1/2 ft. high W. of cor. Posts impracticable
	Begins steep ascent from canyon.
77.00	Top of canyon, 180 ft. above river bears N & S.
80.04	The cor. of secs. 26, 27, 34 + 35 land, mountainous. E. 69 <sup>63</sup> chs. Western slope mountainous land, undergrowth chapparal, soil- rocky - sub soil rocky + gravelly. sandstone and granite formations. W 6.44 chs. East slope of steep canyon. rocky granite formation soil-rocky and gravelly. Juniper scrub cedar + juniper.

Sept 12- 1910

September 13. For solar observation

chains

# Subdivision of T20 S., R25 E.

- see line bet. secs. 27 + 34 page. 19  
N $0^{\circ}01'W$ , bet. secs. 26 + 27  
Over mountainous land, sloping  
East towards Grand river, gradually  
ascending.
- 30.00 Top of ascent, and base of east  
point of high sandstone ledge,  
400 ft. above river.  
Descend over granite boulders  
land sloping NE. to Grand river
- 40.00 On granite ledge,  $\frac{1}{4}$  cor. cannot  
be set.
- 40.25 Set an iron post, 3 ft. long, 1 in. in  
dia., 26 ins. in the ground & a  
mound of stone for witness cor.  
to the  $\frac{1}{4}$  sec. cor. marked on  
brass cap T20 S R 25 E on N.  
half, S 26 on E. half, S 27 on  
W. half and W.C.  $\frac{1}{4}$  on S half,  
raise a mound of stone, 2 ft.  
base,  $1\frac{1}{2}$  ft. high E. of corner.  
Pits impracticable. On account of nature  
of obstacles & am unable to set post in the ground  
Continue to descend.
- 49.50 To right bank of Grand river,  
Set an iron post, 3 ft. long, 1 in. in  
dia., 26 ins. in the ground for  
meander cor. of sec. secs. 26 and  
27, marked on brass cap T20  
S R 25 E on N. half, S 26 M C on  
E half and S 27 on W. half  
and raise a mound of stone  
2 ft. base  $1\frac{1}{2}$  ft. high 5. of cor.  
To determine the distance across  
river, I set a flag on line on  
left bank, then measure a  
base S $89^{\circ}59'W$ . 310 chs. to a point,  
from which the flag bears  
 $N 27^{\circ}13'E$ ; therefore tan  $62^{\circ}46'$  x  
3.10 chs or  $1.943 \times 3.10$  chs = 6.02 chs +  
49.50 makes



Subdivisions of T. 20 S. R. 25 E.

chains

- 55.52 To left bank Grand river,  
Set an iron post, 3 ft. long, 1 in. in  
dia., 26 ins. in a mound of  
earth and stone for meander  
cor. of fractional secs. 26 & 27,  
marked on brass cap. T 20 S R  
25 E on N. half, S 26 on E. half land  
S 27 on W half, and  
raise a mound of stone 2 ft. base  
1½ ft. high, N. of cor. Pits impractical.  
Begin steep ascent from canyon  
over land facing SW.
- 72.50 Top of ascent, 375 ft. above meander  
cor. Bears E. & W.
- Gradually ascend.
- 80.00 Set an iron post, 3 ft. long, 2 ins. in  
dia., 24 ins. in the ground for  
cor. of secs. 22, 23, 26 & 27, marked  
on brass cap
- T 20 S S 22 in NW,  
R 25 E S 23 in NE,  
S 26 in SE, and  
S 27 in SW quadrant,  
and raise a mound of stone  
2 ft. base 1½ ft. high W. of cor.  
Pits impractical  
land, mountainous.
- S 49. 50 chs. E. & NE. slope of  
rocky mountainous land.  
Some undergrowth of sage brush  
Soil, rocky. Sub soil, rocky.
- N. 24.48 chs. Mountainous land  
SW slope. Soil rocky, sub. soil  
rocky, of granite formation.  
Timber, scrub cedar & pinyon
- Sept 13, 1910

September 14: At 7<sup>h</sup> 26<sup>m</sup> am. I mt  
2 set off 39° 03½' N. on the lat.  
are 3° 38' 57" on the decl. arc;  
and determine a meridian

Subdivisions of T. 20 S. R. 24 E.

chains

with the solar at the cor. of  
secs. 22, 23, 26 & 27.

Hence true

$N 89^{\circ} 58' E$ , on a random line  
bet. secs. 23 & 26.

34.00 To edge of high mesa and ledges  
across which I cannot chain.  
To determine the dist., I set a flag  
on line on E. side of high ledge  
and measure a base  $710^{\circ} 01' W$ . 5 chs.  
to a point, from which the flag  
bears  $S. 64^{\circ} 02' E$ , therefore tan  $64.0^{\circ}$   
 $\times$  base or  $2.050 \times 5 = 10.25$  which adds  
to 34.00 makes

44.25 To east side of ledges.  
no temporary  $\frac{1}{4}$  sec. cor. set.  
Intersect the cor. of secs. 23, 24, 25 &  
26

Hence true.

$S 89^{\circ} 58' W$ , on true line bet. secs.  
23 & 26.

Over mountainous land thru  
forest of cedar and juniper, descended  
on edge of high ledge bears NW + S.  
It will be impossible to set the  $\frac{1}{4}$   
sec. cor. at its true point therefore  
set an iron post, 3 ft. long, 1 in. in  
dia, 26 ins. in a mould of  
stone and earth, for witness  
cor. to the  $\frac{1}{4}$  sec. cor. marked  
on brass cap T 20 S R 25 E S 23  
on N. half, S 26 on S half with  
W C  $\frac{1}{4}$  to the west: from which  
a juniper, 10 ins. diam. bears  $N. 43\frac{1}{2}^{\circ} E$   
18 lks. dist. marked

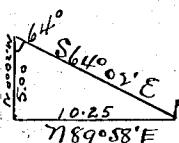
WC  $\frac{1}{4}$  S 23 BT

A juniper, 8 ins. diam., bears S.  $52\frac{1}{2}^{\circ} E$

157 lks. dist., marked

WC  $\frac{1}{4}$  S 26 BT.

39.95 Point for  $\frac{1}{4}$  sec. cor. falls in ledge and cannot be established



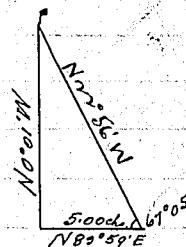
Subdivisions of T 20 S., R 25 E.

chassis

45.90	To N. & W. sides of canyon & high ledges, bears NE & SW. Continue gradual ascent.
52.75	Point of high mesa, bears N 10 E & SW. Descend steep West slope over series of small ledges.
71.00	Base steep descent, bears N. & S.
79.90	The cor. of secs. 22, 23, 26 & 27. Land Mountainous. Steep rough mountainous land sloping S & southwest over west break of high mesa. Soil rocky and of sandstone formation Sub soil, sandy & rocky. Bed rock very close to surface. Timber scrub cedar & pinon.

No° 01 W., on a random line bet. secs. 22 & 23.

40.00	Set temporary 1/4 sec. cor.
68.10	Left bank of Grand river. Set temporary meander corner. To determine distance across river. I set a flag on line on right bank. Then measure a base N 89° 59' E., 5 chs. to a point, from which the flag bears N 22° 56' W. Therefore tan 67° 05' × base or $2.365 \times 5 = 11.82$ , which added to 68.10 makes
79.92	In channel of river and N. side of water. Intersect E. & W. line 5.69 chs. N 88° 57' E. of the meander and witness cor. to secs. 14, 15, 22 & 23, which is a sandstone, 17 × 17 × 4 ins. marked and witnessed as described by the surveyor general Point for closing cor. of secs. 22 & 23 falls in dry channel of Grand river where it cannot be



## Subdivisions of T. 20 S., R. 25 E.

- set. No cor. set.  
Hence I run  
 $S.0^{\circ}01'E.$ , bet. secs. 22 & 23.
- 11.82 To left bank of Grand river,  
set an iron post, 3 ft. long, 1 m. in  
diam., 26 ins. in the ground and  
mound of stone for meander cor.  
of fractional secs. 22 & 23, marked  
on brass caps. T. 20 S. R. 25 E. on N.  
half, S 23 MC on E. half and  
S 22 on W. half, and raise a  
mound of stone 2 ft. base,  $1\frac{1}{2}$  ft.  
high S. of cor.  
Pits impracticable.  
Over mountainous land ascend  
rocky land from river.  
Top of ascent, bears NE. + SW.  
Hence over broken land  
sloping west.
- 15.90 Point for  $\frac{1}{4}$  cor. will fall in wash  
Set an iron post, 3 ft. long, 1 m. in  
diam., 26 ins. in the ground for  
witness cor. to the  $\frac{1}{4}$  sec. cor.  
Mkd. on brass caps. T. 20 S. R. 25 E  
on N. half, S 23 on E. half, and  
S 22 on W. half with W.C  $\frac{1}{4}$  to  
the south: from which  
A cedar, 16 ins. diam., bears N.  $57\frac{1}{2}^{\circ}E.$ ,  
62 lks. dist., marked  
• W.C  $\frac{1}{4}$  S 23 BT.  
raise a mound of stone, 2 ft.  
base,  $1\frac{1}{2}$  ft. high, W. of cor.  
Pits impracticable  
No tree within limits in sec. 22.
- 39.20 Point for  $\frac{1}{4}$  sec. cor. and wash  
course NW.  
The cor. of secs. 22, 23, 26 & 27.  
Land mountainous.  
Rocky west slope to the grand  
river, soil, rocky & gravelly, sub-
- 39.92

Subdivision of T. 20 S., R. 25 E.

chains.

soil, gravelly and some sand. Very little undergrowth. Scattering scrub cedar and pinon trees.

September 14: The sky is overcast at noon observations for lat. are impossible.

September 13: At 8<sup>h</sup>. 26<sup>m</sup>. a.m. l.m.t., I set off  $39^{\circ} 02' 11''$  on the lat. arc;  $40^{\circ} 00'$  N. on the decl. arc; and determine a meridian with the solar at the old  $\frac{1}{4}$  sec. cor. bet. secs. 27 and 34 which is a sandstone  $17 \times 11 \times 5$  ins. marked as described by the Surveyor General.

Hence I run East, on random line, bet. secs. 27 and 34.

22.60 I make careful search for witness cor. to secs. 26, 27, 34 and 35 but fail to find any trace of it. Precipitous descent of 400 ft. down which I cannot chain. To determine the distance, I set a flag on line at base, then measure a base, north, 6.00 chs. to a point from which the flag bears  $S. 60^{\circ} 58' E.$ , therefore tan.  $60^{\circ} 58' \times$  base or  $1.80 \times 6 = 10.80$  chs., which added to 22.60 chs. makes.

33.40 Base of descent.

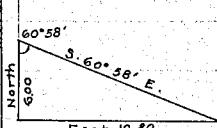
42.08 Intersect N. and S. line 5 lks. S. of the cor. of secs. 26, 27, 34 and 35

Hence I run

S.  $89^{\circ} 56' W.$ , on true line bet. secs. 27 and 34.

Over mountainous land through scattering cedar and pinon ascend.

Base of high mesa, bears N. and SW. Top of mesa, 400 ft. above base, bears N. and SW. ledge 300 ft. high



8.68  
19.48

Subdivision of T. 20 S., R. 25 E.

chain

42.08

Hence gradually descend over western slope of mesa top.  
The  $\frac{1}{4}$  sec. cor.  
Land, mountainous.  
E. 19.30 chs. E. slope of mesa, wall of rock 200 to 300 ft high. Soil, rocky, sub-soil, rocky. W. 22.75 chs. gradually descending slope of mesa. Soil, rocky, sub-soil, sandy and rocky, bed rock very close to surface. 1 to 2 ft. Timber scrub cedar and piñon

At a point 2.14 chs. N.  $89^{\circ}55'$  E. of the cor. of secs. 27, 28, 33 and 34 heretofore described I set an iron post 3 ft. long, 2 ins. in dia., 24 ins. in the ground for closing cor. of secs. 33 and 34, mark on brass cap

C.C T 20 S R 25 E S 27 S 28 on N. half,

S 34 in SE. and

S 33 in SW. quadrant, raise a mound of stone, 2 ft. base, 11 ft. high S. of cor.

I destroy all marks on old cor. pertaining to secs. 33 and 34  
Hence I run

S.  $0^{\circ}02'$  E., bet. secs. 33 and 34.

Over mountainous land through forest of cedar and piñon.

41.50

Ledge and N. side of canyon wall bears SW. and N.  $68^{\circ}$  E.

Hence descend into canyon over series of small ledges and over high bank

27.30

Wash and base of canyon, 275 ft. below top, coarse SW.

Ascend rocky land facing N.

33.25

Top of 50 ft. ledge and flat ridge, 150 ft. above wash, bears E. and W.

Hence across ridge.

Subdivision of T. 20 S., R. 25 E.

chains

- 38.60 To edge of mesa and rock wall 200 ft. high, down which I cannot chain. To determine the distance I set a flag on line on a spur at base of mesa, thence measure a base.
- $7.89^{\circ} 58' E.$ , 4.65 chs. to a point, from which a flag bears  $S. 20^{\circ} 17' W.$ , therefore tan.  $69^{\circ} 41' \times$  base or  $2.70 \times 4.65 = 12.55$  chs. + 38.60 chs. makes.
- 51.15 To spur projects E. I now measure  $7.0^{\circ} 02' W.$  from my point on spur 10.60 chs. to
- 40.55 Base of high rock wall, bears E. + W. Point for  $\frac{1}{4}$  sec. <sup>at 40.00 chs.</sup> cor. falls on rock wall, therefore  
Set an iron post, 3 ft. long, 1 in. in dia, 26 ins. in the ground for witness cor to the  $\frac{1}{4}$  cor. marked on brass cap T 20 S R 25 E on N. half, S 34 on E half and S 33 on W. half with W.C.  $\frac{1}{4}$  to the north, raise a mound of stone 2 ft. base,  $1\frac{1}{2}$  ft. high W. of cor.  
Pit impracticable  
Descend S. face mesa.
- 44.90 Blind canyon and wash, 75 ft. below corner, coarse S.E. ascend.
- 51.15 Spur, projects E.  
Descend 50 ft.
- 53.40 To right bank of Grand river at bend, river flowing south.  
Set an iron post, 3 ft. long. 1 in. in dia, 26 ins. in the ground for meander cor. of fract. sects. 33 & 34, marked on brass cap T 20 S, R 25 E on N half, S 34 in E half and M.C. S 33 on W half, raise a mound of stone 2 ft. base,  $1\frac{1}{2}$  ft. high, N. of cor.  
Pit impracticable  
Land, mountainous.

N 89° 58' E  
4.65 7694

20° 07' W

Subdivision of T. 20 S., R. 25 E.

chain.

N. 38 chs. rocky land draining SW. into "Blood" canyon. Soil, rocks, very poor. Sub-soil, rocky. No undergrowth, no grass. S. 15 chs. SE. slope to Grand river. Soil, rocky, very poor. Sub soil, gravelly and rocky. Some under-growth of sage brush. no grass. Timber a few scattering cedar's Juniper

Sept. 13: At this cor. I set off  $3^{\circ} 56' N.$  on the decl. arc; and at 11<sup>hr</sup> 56<sup>m</sup>. a. m. l. m. t. observe the sun on the meridian; the resulting lat. is  $39^{\circ} 02'$ .

September 15: At 8<sup>h</sup>. 25<sup>m</sup>. a. m. l. m. t. I set off  $39^{\circ} 03'$  on the lat. arc;  $3^{\circ} 13\frac{3}{4}'' N.$  on the decl. arc; and determine a meridian with the solar at the  $\frac{1}{4}$  sec. cor between secs. 22 + 27 which is a sandstone  $16 \times 7 \times 4$  ins., set firmly in a mound of stone, marked as described by the surveyor general. Hence from

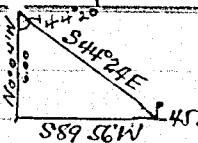
N.  $89^{\circ} 56'$  E. on a random line bet. secs. 22 + 27.

5.38 Top of wall of rock over Grand river, down which I cannot chain, to determine the distance down wall; I set a flag on right bank of Grand river at base of descent, then measure a base, N.  $0^{\circ} 04' W.$ , 6 chs. to a point from which the flag bears S.  $44^{\circ} 24' E.$  From the flag the N. end of the base bears N.  $44^{\circ} 24' W.$ , therefore tangent  $44^{\circ} 20'$

# Subdivisions of T 20 S., R 25 E.

chains

$\times$  base or  $9.77 \times 6 = 5.86$  chs. +  
5.40 chs. =



- 11.26 To right bank of Grand river.  
Set temporary meander cor.  
To determine the distance across stream, I set a flag on line on left bank, then measure a base S.  $0^{\circ} 04' E.$ , 3 chs. to a point, from which flag bears  $N. 60^{\circ} 31' E.$ , therefore tan.  $60^{\circ} 35' \times$  base or  $1.77 \times 3 = 5.32$  chs. which added to 11.26 =

- 16.58 To left bank of Grand river  
Set temporary meander cor.

- 42.08 Intersect  $N. \frac{1}{2} S.$  line at the cor. of secs. 22, 23, 26 & 27, heretofore described.

Hence from

S.  $89^{\circ} 56' W.$ , on true line bet. secs. 22 & 27.

Over mountainous land,  
descending towards Grand. river  
Left Bank of Grand river.

Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for meander cor. of fractional secs. 22 & 27, marked on brass cap T 20 S R 25 E. S 22 M. C on N.

half and S 27 on S. half, raise a mound of stone 2 ft. base,  $1\frac{1}{2}$  ft. high E. of cor.

- 30.82 Right bank of Grand river.  
Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground and mound of stone for meander cor. of frac. secs. 22 & 27, mld. on brass caps T 20 S R 25 E S 22 on N. half, S 27 M C on S half, raise a mound of stone 2 ft. base,  $1\frac{1}{2}$  ft. high. W of cor.

## Subdivisions of T 20 S., R 25 E

chain

	Pits impracticable.
36.70	Top of high rock wall, 4-5 ft above Grand river, bears N. & S. Gradually descend.
42.08	The 1/4 sec. cor. Land, mountainous Soil: E. 25.50 chs. west slope to river, soil, rocky & gravelly, sub-soil, rocky, very little undergrowth. W 16.60 chs. E slope of high mesa. soil, rocks, sub-soil, rocks. no undergrowth. No timber.

Meanders, T 20 S, R 25 E.

Meanders of the left bank of  
Grand river, down stream.  
I commence at the meander cor.  
of fractional secs 14 + 23 heretofore  
described.

September 14. For solar observation  
see line bet secs. 23 + 26 page 16.  
Hence I run with meanders  
in sec. 25.

Thru heavy timber.

S.  $44^{\circ} 34'$  W. 10.90 chs.

West 20.00 chs. Leave timber.  
S.  $57^{\circ} 51'$  W. 9.40 chs. At 6 chs. enter  
low ledges. To  
meander cor. of  
frac'tl secs. 22 + 23.

Land, river bottom.

Soil, black loam, decayed vegetation  
and rocky. Sub-soil, loam & rocky.  
Timber, cottonwood, on first 30.90 chs.  
Very little undergrowth.

September 14, 1910

September 15: For solar observation  
see line bet secs. 22 + 27 page 23.  
Hence I run with meanders in sec 22.  
Over rocky bank.

West 2.50 chs. River flows thru  
narrow gorge.

S.  $42^{\circ} 18'$  W. 10.70 chs.

S.  $30^{\circ} 12'$  W. 26.50 chs. Rock Bank, 20 ft. high  
S.  $4^{\circ}$  W. 6.00 chs.

S.  $14^{\circ} 12'$  W. 9.70 chs.

S.  $0^{\circ} 30'$  E., 13.80 chs.

S.  $4^{\circ} 01'$  E. 8.30 chs. To meander cor.

Land, nearly level. of frac'tl secs. 22 + 27

Soil, rocky, sub-soil-rocky.

No timber

Meanders, T. 20 S., R. 25 E.

Hence in sec. 27  
Over rocky bank.  
 $S 12\frac{1}{4}^{\circ} E.$ , 1.20 chs.  
 $S 34^{\circ} E.$ , 7.50 chs.  
 $S 47\frac{1}{2}^{\circ} E$  9.50 chs.  
 $S 53^{\circ} 32' E$  17.51 chs. To meander  
cor. fract. secs.  
26 + 27.

Land, nearly level.  
Soil, rocky sub soil rocky & sandy  
No undergrowth,  
no timber

Hence in sec. 26.  
Over rocky bank.  
South, 2.10 chs.  
 $S 34^{\circ} E.$  7.00 chs. At Base of high  
ledge. wide, coarse  
 $S 3^{\circ} E.$  6.90 chs. At mouth of wash, 15 ft. deep  
 $S 9^{\circ} E$  12.10 chs.  
 $S 12^{\circ} E.$  13.40 chs.  
 $S 5^{\circ} 17' E$  15.72 chs. To meander cor.  
fract. secs. 26 + 35

Land, level  
Soil, rocky & sandy, sub-soil, rocky:  
4<sup>th</sup> rates  
No undergrowth  
no timber

September 12.

Hence in sec. 35.  
Over level land.  
 $S. 20^{\circ} W.$ , 7.40 chs. At 7 chs. wash, 50 ft. deep  
wide, coarse W. flows  
over high ledge from  
East.

$S. 7\frac{1}{2}^{\circ} W.$ , 5.30 chs. At this point river  
flows thru narrow  
gorge.

$S 29^{\circ} W.$ , 6.50 chs. To meander cor.

Meanders, Tao S., R 25 E.

Land, level

Soil, sandy + rocky,  $4^{\text{th}}$  rate, sub-soil,  
rocky  $4^{\text{th}}$  rate

Timber, a few willows

frac. sec. 34 + 35.

September, 12, 1910

Sept 15: Sky over cast at noon hour.

Hence in sec. 34.

Over level land

S.  $48^{\circ}$  W., 19.50 chs.

S.  $62^{\circ}$  W., 25.25 chs. At 4.50 chs, mouth  
of canyon, 1 ch. wide  
course N.

At 20 chs. on top  
granite wall over  
river 200 ft. high.

S.  $34\frac{3}{4}^{\circ}$  W., 12.00 chs.

S.  $58^{\circ}$  W. 5.40 chs.

S.  $64^{\circ}$  W. 8.00 chs.

S.  $82^{\circ}$  W. 20.80 chs.

S.  $31^{\circ}$  W. 6.80 chs. At 4 chs. small  
ledge at bend of  
river.

S.  $3\frac{1}{2}^{\circ}$  E. 16.02 chs. To meander cor  
frac. sec. 34.

Land level and broken.

Soil, rocky + sandy;  $4^{\text{th}}$  rates. Sub-  
soil, rocky  $4^{\text{th}}$  rate

No timber

No undergrowth

September 15, 1910

Meanders, T. 20 S., R. 25 E.

Meanders of the right bank of Grand river, down stream. I commence at the meander cor. of fract. secs. 15 & 22, heretofore described. At this cor. September 16, at 6<sup>h</sup> 55<sup>m</sup> a.m. l. m. I set off  $39^{\circ} 04' 4''$  N. on the lat. arc;  $2^{\circ} 53'$  N. on the decl. arc; and determine a meridian with the solar. Hence I run with meanders in sec. 22.

Over rocky bank sloping East.  
S.  $3^{\circ} 34' W.$ , 7.40 chs. River enters gorge.  
S.  $4^{\circ} 12' W.$ , 20.00 chs.  
S.  $32^{\circ} W.$ , 15.50 chs.  
S.  $22^{\circ} 12' W.$ , 9.00 chs.  
S.  $1^{\circ} W.$ , 7.50 chs.  
S.  $7^{\circ} W.$ , 14.10 chs.  
S.  $9^{\circ} 47' E.$ , 15.01 chs. To meander cor. fract. secs. 22 & 27

Land, level.

Soil, rocky; 4<sup>th</sup> rate, sub-soil, rocky 4<sup>th</sup> rate.

No timber

No undergrowth.

Hence in sec. 27.

over level land.

S.  $11^{\circ} E.$ , 13.20 chs.

S.  $63^{\circ} E.$ , 17.00 chs.

S.  $58\frac{1}{2}^{\circ} E.$ , 7.00 chs.

S.  $56^{\circ} E.$ , 4.50 chs. This point on ledge  
100 ft. above river

S.  $38^{\circ} 46' E.$ , 5.03 chs. To meander cor.

fract. secs. 26 & 27.

Land, level & broken

Soil, rocky; 4<sup>th</sup> rate, sub-soil,  
rocky 4<sup>th</sup> rate.

No timber

No undergrowth

Meanders, T 20 S., R 25 E.

Hence in sec. 26.

S.  $34\frac{1}{2}^{\circ}$  E. 4.20 chs.

S.  $5\frac{1}{2}^{\circ}$  E. 4.60 chs.

S.  $8^{\circ}$  E., 11.50 " at 2 chs. vertical  
rock wall 25 ft.  
high.

S.  $2\frac{1}{2}^{\circ}$  E. 15.00 "

S.  $5^{\circ} 32' E.$  15.03 " To meander cor.  
frac. secs. 26 + 35.

Land, nearly level.

Soil, rocky, 4<sup>th</sup> rate. sub-soil, rocky.

No timber.

No undergrowth.

Hence in sec. 35.

S.  $29^{\circ}$  W., 4.50 chs. At this point river  
flows thru narrow  
gorge. Vertical wall  
75 to 100 ft. high.

S.  $56^{\circ} 10' W.$ , 5.15 chs. To meander cor.  
frac. secs. 34 + 35.

Land level & broken.

Soil, rocky, 4<sup>th</sup> rate.

No timber.

No undergrowth.

Sept. 16: At this cor. I set off.  $2^{\circ} 46\frac{3}{4}'$   
N. on the decl. arc; and at  $11\frac{1}{2}$   
 $55^{\text{m}}$ . a.m. l.m.t. observe the  
sun on the meridian; the  
resulting lat. is.  $39^{\circ} 02\frac{3}{4}'$ .

Hence in sec 34

Enter willow undergrowth.

S.  $41^{\circ}$  W., 19.50 chs.

S.  $36^{\circ}$  W.. 6.60 chs. This point on ledge  
20 ft. high.

S.  $74^{\circ}$  W., 8.30 chs.

S.  $62^{\circ}$  W., 19.50 chs. It is impossible  
to follow river as  
a vertical rock wall

Meanders, T. 20 S., R. 25 E.

forms the right bank.

S.  $69^{\circ} 45'$  W. 7.10 chs. Up steep granite wall.

River is S. 6 chs. + 200 ft. below.

I will be unable to reach river for some distance so continue on offset line

S.  $65^{\circ}$  W. 11.50 chs. At 3 chs. river is S. 5 chs.

At 11.50 chs. river is S. 5 chs.

S.  $79^{\circ}$  W., 11.60 chs. River is S. 1.50 chs.

S.  $63^{\circ}$  W. 4.90 chs. River is S. 1.00 ch.

S.  $58^{\circ} 02'$  W. 6.40 chs. At 190 chs. mouth of blind canyon wash, 75 ft. wide course. S. The meander cor. fract. secs. 33 & 34

Land level and mountainous  
Soil, rocky & sandy; 4<sup>th</sup> rate  
Sub-soil, rocky; 4<sup>th</sup> rate  
Undergrowth, willow on 19.50 chs.  
Mountainous land. 41.50 chs.

Hence in sec. 33.

Thick dense willow undergrowth  
S.  $55^{\circ}$  W., 5.00 chs.

S.  $5^{\circ}$  W. 10.20 chs. At 4 chs. leave undergrowth  
S.  $3^{\circ}$  E. 8.50 chs.

S.  $27^{\circ} 03'$  W. 6.02 chs. To meander cor. of fract. sec. 33.  
Paved, level.

Soil, rocky & sandy; 4<sup>th</sup> & 5<sup>th</sup> rate  
Undergrowth dense willow, 9 chs.

Meanders Taos, R 25 E.

No timber.

September 16, 1910

## General Description.

This township consists of mountainous land. A high mesa which extends thru secs. 35, 36, 25, 26, 23 and 24 forms the greater part of the township. This mesa is cut by numerous canyons and ravines putting west into the Grand river which flows in a southerly direction thru secs. 22, 23, 26, 25, 33 & 34 & 35. On the west side of the river a high sandstone ledge extends in a northw. & southerly direction parallel to the river. The soil of the entire township is rocky & sandy and can all be classed as 4<sup>th</sup> rate. on the mesas bed rock is found very close to the surface. Some grass good for grazing purposes is found along the river and upon the mesas.

Scrub cedar & pinon trees are found on the entire township but are of no commercial value.

Grand river is the only water in the township. The Little Dolores river flows in a westerly direction thru sec. 36. This river is dry most of the season.

There are no settlers in the township. There are no indications of mine in this tp.

Howard W. Miller

U. S. Instrument man

Retracement of Subdivisions, T. 20 S., R. 25 E.

A solar compass described in Book "A" of this survey is the instrument employed in this retracement.

I know the instrument to be in adjustment by observations made on Polaris September 2, 1910.

I begin at the  $\frac{1}{4}$  sec. cor. between secs. 23 + 24, heretofore described Sept 6. For solar observation see line bet. secs 23 + 24 page 7.

Hence I run

North, retracing line bet. secs. 23 + 24  
fall 14 lks. East of the corner of  
secs. 13, 14, 23 + 24 which is a  
sandstone  $10 \times 6 \times 7$  ms. above,  
ground, firmly set and marked  
and witnessed as described by  
the Surveyor General. I destroy all  
traces of the old corner and  
re-establish it at the same point  
as follows.

Set an iron post, 3 ft. long, 2 ms. in  
dia., 24 ms. in the ground for  
cor. of secs. 13, 14, 23 + 24, marked  
on brass cap.

T 20 S S 14 in NW,

R 25 E S 13 in NE,

S 24 in SE. and

S 23 in SW. quadrant.

dig pits,  $18 \times 18 \times 12$  ms. in each  
sec.  $5\frac{1}{2}$  ft. dist and raise a  
mound of earth 4 ft. base, 2 ft.  
high W. of cor. The true course of this  
line is  $70^{\circ} 12' 00''$ , and the distance is 46 rods.

East, retracing line bet. secs. 13 + 24

Fall 1 lk S. of the  $\frac{1}{4}$  sec. cor. which  
is a sandstone  $12 \times 9 \times 3$  ms. above ground,  
firmly set, and marked and  
witnessed as described by the

Retracement of Subdivisions, T.20 S., R. 25  
Claims

Surveyor general.

The true course of this line is S  $89^{\circ} 59'$  W., and the distance is 40.14 chs.

From the  $\frac{1}{4}$  sec. cor. I continue East.

H.0.22 Fall 4 lks. S. of the cor. of secs. 13, 18, 19 + 24 in the East bdy. of the tp. which is a sandstone 10 x 13 x 5 ins. above ground, firmly set and marked and witnessed as described by the surveyor general.

The true course of this line is S  $89^{\circ} 57'$  W., and the distance is 40.22 chs.

Sept 6: At this sec. cor. I set off  $6^{\circ} 33' 71''$  N. on the decl. arc; and at  $11^{\text{h}} 59^{\text{m}}$  a. m. l. m. t. observe the sun on the meridian; the resulting latitude is  $39^{\circ} 04\frac{1}{4}'$

September 13,

From the  $\frac{1}{4}$  sec. cor. bet. secs. 27 + 34 heretofore described

I run

West, retracing bet. secs. 27 + 34

H.0.06 Fall 6 lks. N. of the cor. of secs. 27, 28, 33 + 34 which is a sandstone 18 x 12 x 6 ins. above ground, firmly set and marked and witnessed as described by the surveyor general I destroy all traces of the old cor. and re-establish it at the same point, as follows.

Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in the ground for cor. of secs. 27, 28, 33 + 34 marked on brass cap

T 20 S S 28 in NW,

Retirement of Subdivisions of T. 20 S., R. 23 E.

R 25 E 52° 27' in N.

S 33° 15' E. and

S 22° in SSW quadrant

and near a mound of stone 2 ft  
tire 14 ft high it is known.

This is perfectly straight. The true course of  
this line is N 49° 55' E. and the distance is

Sept 11. For solar observation on  
line 6th sec. 230 st. page 16

From the cor. of sec. 13, st. 230 st  
herefore described

Trees

West, retracing line 6th sec. 13 + 2

Sept. 10. Face 56 like S. of the 1/4 sec. cor.

which is a sandstone 10 x 10 ft and  
above ground marked as described  
by the surveyor general I find  
no trace of the old boundary trees.  
I destroy all traces of the old line  
and re-establish it at the same  
point, as follows.

Set an iron post, 3 ft long, 1 in. in  
dia, 36 in. in the ground for  
1/2 sec. cor. marked on brass

Sept 11 S 14° on N half, and

S 23° on S half; from which

A cottonwood 11 medium, trees

S 7° E, 33 like dist. marked

42 S 23 137

A cottonwood, tree dead, trees

N 7° 18' W like dist. marked

42 S 11 137

The true course of this line is  
S 49° 12' E, and the distance is  
39.40 ch.

From the 1/4 sec. or 7th line

West

they fall 56 like 71 of the meander  
cor. of fraction of sec. 13, st. 23 which

Rebatement of Subdivision T.20 S.R.25 E

Claim

is a cottonwood post, 6 ins. sq. 3 ft. long. The marks are nearly obliterated and the bearing trees are gone.

I destroy all traces of the old cor. and re-establish it at the same point as follows:

Set an iron post, 3 ft. long, 1 in. dia., 26 ins. in the ground for meander cor. of sec. 14 & 23. Marked on brass cap, T 20 S R 25 E. S 14 M.C. on N. half, & S. 23' on S. half, from which

A Cottonwood 18 ins. diam., bears N.  $32\frac{1}{2}^{\circ}$  E., 119 eks. dist. marked  
T 20 S R 25 E S 14 M C BT

A Cottonwood, 16 ins. diam., bears S  $58\frac{1}{4}^{\circ}$  E., 105 eks. dist. marked  
T 20 S R 25 E S 23 M. C BT.

The true course of this line is N.  $82^{\circ}10'E.$ , and the distance is 41.51 chs.

From the meander cor. I continue west

41.53 fall 73 eks. N. of the witness corner and meander corner to secs 14, 15, 22 & 23. heretofore described. The true bearing is N  $88^{\circ}57'E.$  the distance is 41.74 chs.

September 14, 1910

Howard W. Miller

U. S. Instrumentman

FINAL OATHS OF DEPUTY SURVEYOR AND HIS ASSISTANTS.

LIST OF NAMES.

A list of the names of the individuals employed by Howard W. Miller,  
Instrumentman, United States Deputy Surveyor, to assist in running, measuring, and  
marking the lines and corners described in the foregoing field notes of the survey of subdivisions  
meanders and retracements of T 20 S. R. 25 E. S.L.B. & M., Utah,  
showing the respective capacities in which they acted:

Fred Wright, Chainman. ✓  
Karl Rothermund, Chainman. ✓  
Roscoe Hallett, Moundman. ✓  
Edward Jones, Moundman. ✓  
Ben Egle, Axman. ✓  
Ben Egle, Axman. ✓  
Ben Egle, Flagman. ✓

FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted Howard W. Miller,  
Instrumentman, United States Deputy Surveyor, in surveying all  
those parts or portions of the subdivisions, meanders and  
retracements of township 20 south, Range  
25 east.

of the Salt  
Lake Base & meridian, Utah of Utah, which are represented  
in the foregoing field notes as having been surveyed by him and under his direction; and that said survey  
has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the  
corner monuments established, according to the instructions furnished by the United States Surveyor  
General for Utah.  
Fred Wright, Chainman.  
Karl Rothermund, Chainman. ✓  
Roscoe Hallett, Moundman. ✓  
Edward Jones, Moundman. ✓  
Ben Egle, Axman. ✓  
Ben Egle, Axman. ✓  
Ben Egle, Flagman. ✓

Subscribed and sworn to before me this 16<sup>th</sup> day of September, 1910



Howard W. Miller  
U.S. Instrumentman

**FINAL OATH OF UNITED STATES DEPUTY SURVEYOR.**

I, \_\_\_\_\_, United States Deputy Surveyor, solemnly swear that, in pursuance of a contract received from \_\_\_\_\_, bearing date \_\_\_\_\_, day of \_\_\_\_\_, 19\_\_\_\_\_, I have well, faithfully, and truly, in proper person, and in strict conformity with the instructions furnished by the United States Surveyor General for \_\_\_\_\_, the Manual of Surveying Instructions, and the like United States Surveyor all those parts or portions of \_\_\_\_\_.

For final oath of transcript see book "gl" T. 24 S., R. 26 E.

..... of the \_\_\_\_\_ meridian, in the \_\_\_\_\_ of \_\_\_\_\_, which are represented in the foregoing field notes as having been surveyed by me, and under my direction; and I do further swear that all the corners of said survey have been established and perpetuated in strict accordance with the Manual of Surveying Instructions, and the special written instructions of the United States Surveyor General for \_\_\_\_\_ and in the specific manner described in the field notes the foregoing are the original field notes of such survey.

United States Deputy

Subscribed by said \_\_\_\_\_, and sworn to before me  
this \_\_\_\_\_ day of \_\_\_\_\_, 190\_\_\_\_\_

600

**APPROVAL.**

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Salt Lake City, Utah, June 25, 1913

The foregoing field notes of the survey of the subdivisional and remainder of Township No. 20 South, Range No. 25 East of the Salt Lake Base Meridian, Utah.

executed by Howard W. Miller,  
under his special instructions, dated AUGUST 6, 1910, has  
critically examined, and the necessary corrections and explanations made, the said field note  
surveys they describe, are hereby approved.

## *United States Surveyor*

I certify that the foregoing transcript of the field notes of the above-described surveys in \_\_\_\_\_ has been correctly copied from the original notes on file in the \_\_\_\_\_

## *United States Surveyor*

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FILED

MAR 1911

Book 74.

OF THE SURVEY OF THE

*Retracement of the 141st - 144th  
mile, Utah - Colorado State  
Boundary*

Of the ..... Meridian,

## AS SURVEYED BY

*Howard W. Miller*, United States Deputy Surveyor,  
 assignment group  
 Under his contract No. L, Utah, dated August 6, 1900  
 Survey commenced September 9, 1900  
 Survey completed September 9, 1900

NAMES AND DUTIES OF ASSISTANTS.

Fred Wright, chairman.

Karl Rothermund, chairman.

Roscoe Hallett, moundsman.

Edward Jones, air man.

Ben Egle, flagman.

BOOK A-378

INDEX DIAGRAM.

Township 20 South, Range 26 East

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31	32	33	34	35	36

Meanders Page.....

PRELIMINARY OATHS OF ASSISTANTS.

WE, Fred Wright and Karl Rothermund  
 do solemnly swear that we will well and faithfully execute the duties of chainmen; that we will  
 chain upon even and uneven ground, and plumb the tally pins, either by sticking or dropping the  
 we will report the true distances to all notable objects, and the true lengths of all lines that we  
 measuring, to the best of our skill and ability, and in accordance with instructions given us, in the  
the retracement of the 141-144<sup>th</sup> mile Utah - Colorado

Fred Wright

Karl Rothermund

Subscribed and sworn to before me this 9<sup>th</sup>  
 day of September, 1910



WE, Roscoe Hallett and  
 do solemnly swear that we will well and truly perform the duties of moundmen in the est  
 of corners, according to the instructions given <sup>me</sup> to the best of my skill and ability, in the  
the retracement of the 141-144<sup>th</sup> mile, Utah - Colorado State

Roscoe Hallett

Subscribed and sworn to before me this 9<sup>th</sup>  
 day of September, 1910



WE, Edward Jones and  
 do solemnly swear that we will well and truly perform the duties of axmen in the establishment  
 and other duties, according to instructions given <sup>me</sup> to the best of my skill and ability, in the  
the retracement of the 141-144<sup>th</sup> mile, Utah - Colorado State

Edward Jones

Subscribed and sworn to before me this 9<sup>th</sup>  
 day of September, 1910



I, Ben Eagle, do solemnly swear that I will well  
 perform the duties of flagman according to instructions given me, to the best of my skill and ability,  
the retracement of the 141-144<sup>th</sup> mile, Utah - Colorado State

Ben Eagle

Subscribed and sworn to before me this 9<sup>th</sup>  
 day of September, 1910



Howard W Miller  
U.S. Instrumentman

Retracement of the Utah - Colorado boundary line

chain

Survey commenced September 9, 1910  
and executed with a W. & L. E.  
Gurley solar compass No 1043.

For description and test of instrument  
see book "A" of this survey.

I know the instrument to be in  
adjustment by observations made  
on Polaris Sept 6, 1910.

I begin at the 140 th. mile cor.  
heretofore described.

Sept. 9: For solar observation see book  
"I," line bet. secs. 20 and 29, page 8.  
Hence I run

81.58 N. 0° 17' E., retracing the 141 st. mile  
Intersect the 141 st. mile cor. on the  
Utah - Colorado boundary line,  
heretofore described.

The true bearing of this line is N. 0°  
17' E., and the distance is 81.58 chs.

80.97 N. 0° 17' E., retracing the 142 nd. mile  
Fall 9' lks. E. of the 142 nd. mile  
cor., which is a cross on solid  
sandstone bed rock, marked and  
written as described by the  
Surveyor General.

The true bearing of this line is  
N. 0° 13' E., and the distance is 80.97  
chs.

September 9, 1910

Sept 10: For solar observation  
see line bet. secs. 19 and 20, book "I."

N. 0° 17' E., retracing the 143 rd. mile.

The closing cor. of secs. 17 and 20

T. 20 S., R. 26 E. Heretofore described.

North of this point the line is  
inaccessible, being cut by many  
impassable canyons with vertical walls.

10.13

Retracement of the Utah-Colorado Boundary

chains

100 to 300 ft. high across which I  
cannot chain.

There is no 143rd. mile stone reported  
to be set. I therefore triangulate to the  
north side of high cliffs as follows.  
I set a flag on line on top of cliffs  
 $71.0^{\circ} 17' E.$  The distance bet the  $\frac{1}{4}$  sec.  
cor. bet. sec. 17 and 20 and the closing  
cor. of secs. 17 and 20 is 39.30 chs.  
and the course is east. From the  $\frac{1}{4}$   
sec. cor. the flag bears  $N. 26^{\circ} 23' E.$   
and from the flag the  $\frac{1}{4}$  sec. cor.  
bears  $S. 26^{\circ} 23' W.$  By separate  
measurement of each angle they are  
found to be respectively,  $90^{\circ} 17'$ ,  $26^{\circ} 06'$   
and  $63^{\circ} 37'$ . I compute the distance  
as follows.

$$\begin{aligned}\log 39.30 \text{ chs.} &= 1.594393 \\ \log \sin 63^{\circ} 37' &= 9.952231-10 \\ \log \sin 26^{\circ} 06' &= 0.356637 \\ \log & 11.903261-10 =\end{aligned}$$

$80.03$  chs. which added to  $10.13$  chs.  
makes  $90.16$  chs; or  $10.16$  chs. on the  
144th. mile.

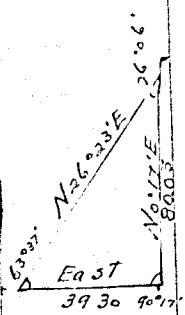
Hence I continue  $N. 0^{\circ} 17' E$  on the  
144th. mile counting distances  
from true cor. point of the 143rd.  
mile.

88.73 Intersect the 144th. mile cor. on the  
Utah-Colorado boundary line which  
is a sandstone  $18 \times 12 \times 3$  ins. firmly  
set in a mound of stone, and marked  
and witnessed as described by the  
Surveyor General.

The true bearing of the line bet. the  
142nd. and 144th. mile cors is  $N. 0^{\circ} 17'$   
and the distance is 168.73 chs.

September 10, 1910

Howard W. Miller  
U. S. Geologist



FINAL OATHS OF DEPUTY SURVEYOR AND HIS ASSISTANTS.

LIST OF NAMES.

A list of the names of the individuals employed by Howard W. Miller,  
Instrumentman, United States Deputy Surveyor, to assist in running, measuring, and  
marking the lines and corners described in the foregoing field notes of the ~~survey of~~ ~~the retrace ment~~  
~~of the 141-144 mile, Utah - Colorado State boundary~~  
showing the respective capacities in which they acted:

Fred Wright, Chainman. ✓  
Karl Rothermund, Chainman. ✓  
Roscoe Hallett, Moundman. ✓  
Edward Jones, Moundman. ✓  
Ben Egle, Axman. ✓  
Ben Egle, Axman. ✓  
Ben Egle, Flagman. ✓

FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted Howard W. Miller,  
Instrumentman, United States Deputy Surveyor, in surveying all  
those parts or portions of the ~~retracements of the 141st + 144th~~  
~~mile of the Utah - Colorado boundary~~

of the  
meridian, which are represented  
in the foregoing field notes as having been surveyed by him and under his direction; and that said survey  
has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the  
corner monuments established, according to the instructions furnished by the United States Surveyor  
General for Utah.

Fred Wright, Chainman. ✓  
Karl Rothermund, Chainman. ✓  
Roscoe Hallett, Moundman. ✓  
Edward Jones, Moundman. ✓  
Ben Egle, Axman. ✓  
Ben Egle, Axman. ✓  
Ben Egle, Flagman. ✓

Subscribed and sworn to before me this 9<sup>th</sup> }  
day of September, 190 }

SEAL

Howard W. Miller  
U.S. Instrumentman

## FINAL OATH OF UNITED STATES DEPUTY SURVEYOR.

I, \_\_\_\_\_, United States Deputy Surveyor \_\_\_\_\_, solemnly swear that, in pursuance of a contract received from \_\_\_\_\_, United States Surveyor General for \_\_\_\_\_, bearing date \_\_\_\_\_, day of \_\_\_\_\_, 190\_\_\_\_\_, I have well, faithfully, and truly, in my proper person, and in strict conformity with the instructions furnished by the United States Surveyor General for \_\_\_\_\_, the Manual of Surveying Instructions, and the laws of the United States, surveyed all those parts or portions of \_\_\_\_\_.

For final oath of transitman see book "Z" T. 24 S., R. 26 E.

of the \_\_\_\_\_ meridian, in the \_\_\_\_\_ of \_\_\_\_\_, which are represented in the foregoing field notes as having been surveyed by me, and under my direction; and I do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the Manual of Surveying Instructions, and the special written instructions of the United States Surveyor General for \_\_\_\_\_ and in the specific manner described in the field notes, and that the foregoing are the original field notes of such survey.

United States Deputy Surveyor \_\_\_\_\_

Subscribed by said \_\_\_\_\_, and sworn to before me }  
this \_\_\_\_\_ day of \_\_\_\_\_, 190\_\_\_\_\_. }



## APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Salt Lake City, Utah, June 25, 1913.

The foregoing field notes of the survey of retracement of the 141st and 144th miles of the Utah-Colorado Boundary line.

executed by Howard W. Miller  
Special Instructions  
under his contract No. A, dated August 6, 1910, 190\_\_\_\_\_, having  
critically examined, and the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

*Howard W. Miller*  
United States Surveyor General

I certify that the foregoing transcript of the field notes of the above-described surveys in \_\_\_\_\_, has been correctly copied from the original notes on file in this office.

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BOOK  
"A-378

Book I

M. R. B.

## FIELD NOTES

OF THE SURVEY OF THE

Subdivisions and Resections  
of township 20 south, Range 26  
east

of the Salt Lake Base and Meridian, Utah.

AS SURVEYED BY

Howard W. Miller, United States Deputy Surveyor,

Assignment Group, Under his contract No. 4, Utah, dated August 6, 1900

Survey commenced September 7, 1900

Survey completed September 10, 1900

NAMES AND DUTIES OF ASSISTANTS.

Fred Wright, chairman

Karl Rothermund, chairman

Roscoe Hallett, moundsman

Edward Jones, ax man

Ben Eggle, flagman

BOOK A-378

INDEX DIAGRAM.

*Township 20 South, Range 26 East.*

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31		82	83	84	85
					86

*Meanders Page*

21  
PRELIMINARY OATHS OF ASSISTANTS.

WE, Fred Wright, and Karl Rothermund  
do solemnly swear that we will well and faithfully execute the duties of chainmen; that we will  
chain upon even and uneven ground, and plumb the tally pins, either by sticking or dropping them;  
we will report the true distances to all notable objects, and the true lengths of all lines that we  
measure, to the best of our skill and ability, and in accordance with instructions given us, in the  
the subdivisions and retracements of T. 20 S. R. 26  
S.L.B. & M., Utah.

Fred Wright  
Karl Rothermund

Subscribed and sworn to before me this 7<sup>th</sup>  
day of September, 1900



Howard W. Miller  
U.S. Instrumentman

WE, Rosege Hallett, and  
do solemnly swear that we will well and truly perform the duties of moundmen in the estimation  
of corners, according to the instructions given us to the best of our skill and ability, in the  
the subdivisions & retracements of T. 20 S., R. 26  
S.L.B. & M., Utah.

Rosege Hallett

Subscribed and sworn to before me this 7<sup>th</sup>  
day of September, 1900



Howard W. Miller  
U.S. Instrumentman

WE, Edward Jones, and  
do solemnly swear that we will well and truly perform the duties of axmen in the establishment  
and other duties, according to instructions given us to the best of our skill and ability, in the  
the subdivisions & retracements of T. 20 S. R. 26  
S.L.B. & M., Utah.

Edward Jones

Subscribed and sworn to before me this 7<sup>th</sup>  
day of September, 1900



Howard W. Miller  
U.S. Instrumentman

I, Ben Eagle, do solemnly swear that I will well  
perform the duties of flagman according to instructions given me, to the best of my skill and ability,  
in the survey of the subdivisions & retracements of T. 20 S., R. 26  
S.L.B. & M., Utah.

Ben Eagle

Subscribed and sworn to before me this 7<sup>th</sup>  
day of September, 1900



Howard W. Miller  
U.S. Instrumentman

Subdivisions T 20 S., R 26 E.

chain

Survey commenced September 7, 1910 and executed with a W. & L. E. Gurley solar compass described in book "A" of this survey.

I know the instrument to be in adjustment by observations made on Polaris September 6.

I begin at the true corner point of standard corner of secs. 31 + 32 on the S. bdy. of the tp. heretofore described.

Hence true

$N.0^{\circ}01'E.$ , bet. secs. 31 + 32.

Over mountainous land, descend steep rocky N. slope spur, thru scattering forest of cedar & juniper towards Little Dolores river.

15.00 Dry channel of Little Dolores river, 50 lks. wide, 200 ft. below sec. cor., course  $N.85^{\circ}W.$

Hence up steep ascent towards mesa.

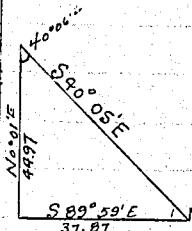
25.00 Stubbs cabin, bears East 20 chs.  
33.00 Base of impassable ledge and mesa, up which I cannot climb. To determine the distance I proceed as follows.

I set a flag  $S.89^{\circ}59'E.$ , 37.87 chs. from the <sup>true</sup> cor. point of secs. 31 + 32. I now place my transit on line,  $N.0^{\circ}01'E.$  of the true corner point of secs. 31 + 32. From this point the east end of my base bears  $S.40^{\circ}05'E.$ , therefore  $\cotan 40^{\circ}06' \times$  base or  $1.175 \times 37.87 =$

44.97 To top of mesa + rock wall, 600 ft. above river, bears NE. + SW.

Point for the  $\frac{1}{4}$  sec. cor. falls on ledge where it cannot be set.

I therefore perpetuate cor. on solid



Subdivisions T 20 S R 26 E

etamus

ground, as follows

- 45.50 Set an iron post, 3 ft. long, 1 in. dia., 26 ins. in a mound of earth and stone for witness cor. to the  $\frac{1}{4}$  sec. cor. marked on brass cap. T 20 S R 26 E on N. half, S 32 on E. half, S 31 on W. half with W C  $\frac{1}{4}$  to the south; from which a pumon, 10 ins. diam., bears  $77.69\frac{1}{2}^{\circ}$  E. 36 lks. dist. marked

W C  $\frac{1}{4}$  S 32 BT

A pumon, 10 ins. diam., bears  $S.63\frac{3}{4}^{\circ}$  W.

190 lks. dist. marked

W C  $\frac{1}{4}$  S 31 BT

Enter dense timber, descend over mesa top.

- 58.58 Edge of mesa, bears E  $\sim$   $77.85^{\circ}$  W. Precipitous descent of 475 ft., down which I cannot chain. To determine the distance I set a flag on line at base of descent, then measure a base  $77.89^{\circ} 59' \text{ W.}^{7 \text{ chs.}}$  to a point, from which flag bears  $77.21^{\circ} 58' \text{ E.}$ , therefore tan  $68^{\circ} 03' \times \text{base or } 2.48 \times 7 = 17.37$  which added to 58.58 makes to base of mesa, bears NW + SE. Hence over broken land.

- 75.95 80.00 Set an iron post, 3 ft. long, 1 in. dia., 24 ins. in the ground and mound of stone for cor. of secs. 29, 30, 31 + 32, marked on brass cap

T 20 S S 30 in NW,

R 26 E S 29 in NE,

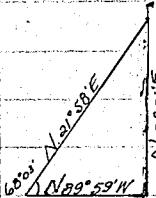
S 32 in SE., and

S 31 in SW quadrant,

from which

A pumon, 14 ins. diam., bears  $77.54\frac{3}{4}^{\circ}$  E.

41 lks. dist. marked



Subdivision of T 20 S R 26 E

chains

T 20 S R 26 E S 29 BT

A pinon, 16 ins. diam., bears S.  $40\frac{1}{2}^{\circ}$  E,  
63 lks. dist., marked

T 20 S R 26 E S 32 BT

A pinon, 12 ins. diam., bears S.  $57\frac{1}{4}^{\circ}$  W,  
51 lks. dist., marked, T 20 S R 26 E S 31 BT.

A pinon, 12 ins. diam., bears N.  $39^{\circ} 00'$  W, 54 lks. dist., mkd.  
T 20 S R 26 E S 30 BT.

Land mountainous  
S. 15 chs. Steep rocky N. slope to Little Colorado river, No undergrowth, No grass. Soil, rocky, very poor, sub-soil, rocky. West 30 chs. S.E. slope mesa, soil, rocky & sandy loam at base, sub soil, rocky & sandy. Undergrowth sage brush, good grass. N. 35 chs. N. slope of mesa, soil rocky, sub soil rocky, very poor. Juniper, cedar & pinon.

September 7, 1910

September 8: At 7<sup>h</sup> 28<sup>m</sup> a.m., l. m. t. Set off  
39° 02' 5 on the lat. arc; 5° 55' N. on the  
decl. arc; and determine a meridian  
with the solar, at the cor. of secs.  
29, 30, 31 & 32.

Hence true,

West, on a random line bet. secs 30 & 31.

Set temporary  $\frac{1}{4}$  cor.

Intersect W. bdy. of the sp. 5 lks. N.  
of the cor. of secs. 25, 30, 31 & 36 here-  
before described

Hence true

N.  $89^{\circ} 58' E.$ , on true line bet. secs.

30. & 31

Over mountainous land,  
ascending thru dense forest of  
Cedar & Pinon.

Ridge, 75 ft. above sec. cor. bears  
N.E. & S.W.

Descend 100 ft.

To east side of mesa and ledge  
100 ft. high, bears N.W. & S.E.

19.50

37.50

Chains

## Subdivision of T 20 S R 26 E

Point for  $\frac{1}{4}$  sec. cor. will fall on steep slope of sandstone bed rock where corner cannot be set. Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in a mound of earth and stone for witness cor. to the  $\frac{1}{4}$  sec. cor. marked on brass cap T 20 S R 26 E S 30 on N. half and S 31 on S. half, with W. C  $\frac{1}{4}$  to the east, from which  
 A pinon, 10 ins. diam., bears N.  $29^{\circ} W.$ ,  
 48 lks. dist., marked  
 W C  $\frac{1}{4}$  S 30 BT.

A pinon, 10 ins. diam., bears S.  $18\frac{1}{4}^{\circ} W.$   
 20 lks. dist., marked  
 W C  $\frac{1}{4}$  S 31 BT.

Descend over ledges and boulders.

$\frac{40.03}{77.00}$  Point for  $\frac{1}{4}$  sec. cor.  
 Base of mesa, bears NW.  $\rightarrow$  SE.

$\frac{80.06}{47.5}$  ft. below top of mesa

The cor. of secs. 29, 30, 31 + 32.

West. 19.50 chs. West slope of mesa soil, decayed vegetation and sandy. Sub-soil, bed rock 2 to 4 ft. deep. East 60.50 chs. steep east slope of mesa. Very poor rocky soil. Sub-soil rocky. Very little undergrowth. No grass. Limber, scrub cedar & pinon

East on true line bet. secs. 29 and 32.

Over mountainous land through forest of cedar & pinon.

Gradually ascend.

$\frac{7.00}{22.00}$  Hollow, drains N.  $30^{\circ} W.$ . Ascend 75 ft.

$\frac{12.00}{25.00}$  Low ridge, bears N.  $\rightarrow$  S.

Descend over land sloping north near top of ridge or divide

chain

Subdivisions of T. 20 S., R. 26 E.

- 15.50 Hollow, drains NW.  
Ascend
- 15.90 Road, Stubbs ranch to Westwater  
Utah, bears  $71.30^{\circ} W.$  &  $S. 30^{\circ} E.$  ✓
- 28.50 Ridge, bears N. + S.  
Elev. 75 ft
- 31.80 Gulch, drains N.
- 40.00 Set an iron post, 3 ft. long, 1 in. in  
dia., 26 lbs. in the ground for  
 $\frac{1}{4}$  sec. cor. marked on brass  
cap  $\frac{1}{4} S. 29$  on N. half  $S. 32$  on  
S. half; from which  
A cedar, 18 in. diam., bears  $S. 21\frac{3}{4}^{\circ} E.$   
86 lks. dist., marked  
 $\frac{1}{4} S. 32$  BT.
- A cedar 20 in. diam., bears  $N. 60^{\circ} W.$ ,  
31 lks. dist., marked  
 $\frac{1}{4} S. 29$  BT.
- 54.25 Ledge, over wash, 2.5 ft. high, bears,  
 $N. + S.$
- 56.00 Snyders house, bears  $S. 24$  chs.
- 78.73 Intersect Utah - Colorado state  
boundary  $11.47$  chs.  $N. 0^{\circ} 17' E.$  of the  
 $140^{\text{th}}$  mile corner, which is a  
nearly obliterated mound of earth  
with very slight traces of pits.  
Set an iron post, 3 ft. long, 2 in. in  
dia., 24 lbs. in the ground for  
closing corner of secs. 29 + 32  
marked on brass cap  
CC C on E half.  
U on W half,  
T 20 S R 26 E  $S. 29$  in NW.,  
 $S. 32$  in SW quadrant  
from which
- A juniper, 13 in. diam., bears  $N. 74\frac{1}{2}^{\circ} W.$ ,  
184 lks. dist., marked  
CCT 20 S R 26 E  $S. 29$  BT
- A juniper, 11 in. diam., bears  $S. 79\frac{1}{2}^{\circ} W.$ ,  
217 lks. dist. marked  
CCT 20 S R 26 E  $S. 32$  BT

## Subdivisions T.20 S. R. 26 E.

chains

	<p>Land mountainous with a north slope. Some undergrowth of sage brush, very little grass. Soil, rocky &amp; gravelly, subsoil sandy &amp; rocky. Very poor.</p> <p>Timber dense cedar &amp; juniper</p> <p>September 8: at this sec. cor. I set off <math>5^{\circ}49\frac{3}{4}'N.</math> on the decl. arc, and at <math>11^{\circ}58'W.</math> a.m. l.m.t. observe the sun on the meridian the resulting lat is <math>39^{\circ}02\frac{1}{2}'</math></p>
	<p><math>N.0^{\circ}01'E.</math>, on a random line bet. secs. 29 &amp; 30.</p>
4.00	Set temporary $\frac{1}{4}$ sec. cor.
80.83	Intersect evident remains of the old cor. of secs. 19, 20, 29 & 30 which is a cross on a sandstone ledge, forming the west side of Jones canyon. All other marks are obliterated. I am unable to re-establish the old corner at the same point. but renew the cross.
	Hence true
	$S.0^{\circ}01'W.$ , bet. secs. 29 & 30, on true line over mountainous land.
5.20	Ascend over ledges from canyon top of west side of Jones canyon bears $N.40^{\circ}W.$ & $S.40^{\circ}E.$
	Set an iron post, 3 ft. long, 2 in. in dia., 24 in. in a mound of earth & stone for witness cor. to secs. 19, 20, 29 & 30 marked on brass cap. as follows. The top of page representing north
	$T.20\ S. R. 26\ E.$ S19 S20 W.C.
	S30   S29
	from which
	A pinon, 20 in. diam., bears $S.45^{\circ}E.$

chains

## Subdivisions of T 20 S R 26 E.

- 15 lks. dist. marked  
W C T 20 S R 26 E S 29 BT  
and raise a mound of stone, 2 ft.  
base  $1\frac{1}{2}$  ft. high W. of cor.  
No other trees within limits  
Pits impracticable  
Hence over broken land thru  
scattered forest of cedar + pinon  
Set an iron post, 3 ft. long, 1 in. in  
dia., 26 ms. in the ground and  
mound of stone for  $\frac{1}{4}$  sec. cor.  
marked on brass cap  $\frac{1}{4} S 30$  on  
W. half and S 29 on E half.  
from which  
A cedar, 12 ms. diam., bears  $S 75^{\circ} 34' E.$   
10 lks. dist. marked  
 $\frac{1}{4} S 29 BT$ .  
A pinon, 12 ms., diam bears  $S 81^{\circ} W.$   
115 lks. dist. marked  
 $\frac{1}{4} S 30 BT$ .
- 41.25 Road, Stubbs ranch to Westwater  
Utah, bears  $N. 30^{\circ} W.$  and  $S. 30^{\circ} E.$   
Enter very dense cedar + pinon  
The cor. of secs. 29, 30, 31 + 32.  
Land mountainous.  
Soil, rocky + gravelly. 1 $\frac{1}{2}$  rate, sub-  
soil, rocky.  
Undergrowth, some sage brush  
Timber, cedar + pinon of no  
commercial value.
- 80.83

September 8, 1910

September 9: At 7<sup>h</sup> 28<sup>m</sup> a. m. I. m. t  
I set off  $39^{\circ} 03' 5$  on the lat. arc.  $5^{\circ} 32' N.$  on the decl. arc; and det-  
ermine a meridian with the  
solar at the true corner point of  
secs. 19, 20, 29 + 30 heretofore  
described.  
Hence I now

Subdivisions T 20 S., R 26 E.

chain

	East, on a true line bet. secs. 20 & 29 Over mountainous land; thru scattering scrub cedar & Juniper. Wash in canyon, 50 lks. wide, Course N. 10° W.
6.50	Hence over land facing N. Enter channel of fork of Jones canyon.
10.70	Leave channel, turns SE. Begin steep ascent over rocky land sloping SW.
30.00	Base of ledges bears N. 80° W & S. 80° E.
40.00	Point for $\frac{1}{4}$ sec. cor. falls on ledges where it cannot be set. on top of ledges, 175 ft. above canyon, bears N. 80° W & S. 80° E.
41.75	Set an iron post, 3 ft. long, 1 mi. in dia., <sup>26 in. in</sup> the ground, for witness cor. to the $\frac{1}{4}$ sec. cor. marked on brass cap T 20 S. R 26 E S 20 on N half, S 29 on S half, with WC $\frac{1}{4}$ to the West, and raise a mound of stone 2 ft. base $1\frac{1}{2}$ ft. high N. of corner.
	Trees within limits in both secs. but all too poor to mark Pits impracticable Enter dense cedars & Juniper. Gradually ascend.
79.00	Intersect Utah - Colorado state boundary line 10.68 chs. N. 0° 13' E. of the 141st mile corner which is a sandstone $18 \times 14 \times 4$ ins., firmly set in a mound of stone marked as described by the surveyor general. Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in a mound of earth and stone for closing

chain

## Subdivisions of T 20 S. R 26 E.

corner of secs 20 + 29, marked  
on brass cap.

T 20 S R 26 E S 20 in NW, and  
S 29 in SW. quadrant  
C C C on East half and  
U on W. half. from  
which

A pinon, 18 in. diam., bears  
S.  $35^{\circ}$  W., 57 lks. dist. marked  
C C T 20 S R 26 E S 29 B.T.  
A pinon 14 in. diam., bears  
 $7.69\frac{3}{4}^{\circ}$  W. 72 lks dist. marked  
C C T 20 S R 26 E S 20 B.T.

W. 6.50 chs. steep rocky E. slope of  
canyon. Soil, rocky, sub-soil rocky,  
E. 73.50 chs. W. + SW slopes. W. 3.3 chs  
along base of canyon, remaining  
part on top of mesa. Soil rocky  
& sandy, sub-soil rocky very poor.  
Timber scrub cedars & pinon.

September 10:

From the cor. of secs 17, 18, 19 + 20  
which is a sandstone  $23 \times 15 \times 5$   
in. firmly set in a mound  
of stone marked as described  
by the surveyor general

Hence I run

East, on a true line bet. secs. 17 + 20  
Ascend over rolling mountainous  
land thru scattering cedar and  
pinon.

Ridge, 80 ft. above sec. cor., bears  
NW + SE.

Begin descent towards canyon.  
On top of west side of canyon,  
bearing NW + SE.

Set an iron post, 3 ft. long, 1 in. in  
dia., 26 in. in the ground for  
 $\frac{1}{4}$  sec. cor. marked on brass

15.00

36.00

40.00

Subdivisions of T. 20 S. R. 26 E.

Davis

		cap $\frac{1}{4}$ S 17 on N. half and S 20 on S half, raise a mound of stone 2 ft. base, $1\frac{1}{2}$ ft. high N. of cor.
		Pits impracticable Descend into canyon.
48.50		Bottom of canyon & wash, 15 lks. wide, coarse NW.
		Ascend.
51.00		Base of 75 ft. ledge, bears NW + SE
53.00		Top of ledge + East side of canyon, 200 ft. above wash, bears NW + SE.
		Continue to ascend.
64.00		Ridge, bears N. + S.
65.35		West side of canyon, bears N. + S.
		Descend 75 ft.
71.00		Bottom of canyon and wash, 10 lks. wide, coarse N.
		Ascend
75.50		Top of canyon and ridge, bears N. + S.
79.30		Intersect, Utah - Colorado state boundary line 10.13 chs. N 0° 17' E. of the $1\frac{1}{4}$ mile cor. which is a cross on a sandstone ledge marked and witnessed as described by the surveyor general. Set an iron post, 3 ft. long, 2 in. dia., 24 in. in the ground for closing corner of secs. 17 + 20, marked on brass cap

T 20 S R 26 E S 17 in NW, +

S 20 in SW quadrant

C C C in E. half and

U. in W. half, from

which

A pinon, grn. diam. bears S.  $41\frac{1}{4}^{\circ}$  W.,

131 lks. distant marked

C C T 20 S R 26 E S 20 BT

A pinon, 12 in. diam., bears N  $48\frac{1}{4}^{\circ}$  W.

Subdivision of T. 20 S., R. 26 E.

Chains.

227 lks. dist., marked.

C.C. T 20 S R 26 E S 17 BT.

Land mountainous with general N. slopes. Soil, rocky on rocky and sandy sub-soil; 4 th. rate, Undergrowth, sage brush.

Timber, cedar and pinon.

Land mountainous or heavily timbered 79. 30 chs.

September 10: At this closing cor. I set off  $5^{\circ} 04'$  N. on the decl. arc; and at 11 h. 57 m. a.m. l.m.t., observe the sun on the meridian; the resulting lat. is  $39^{\circ} 04'$

From the cor. of secs. 7, 8, 17 and 18 which is a sandstone,  $18 \times 10 \times 3$  ins. firmly set in a mound of stone, and marked and witnessed as described by the Surveyor General.

I run

East, on true line bet. secs. 8 and 17. Over rolling mountainous land through scattering cedar and pinon timber and undergrowth of sage brush.

8.00 Wash, course NW.

Ascend.

27.00 Spur, at base of 200 ft. ledge, projects S.

Descend 100 ft. to

Wash, course SW.

35.80 Set an iron post, 3 ft. long. 1 in. in dia.,  $2\frac{1}{4}$  ins. in the ground for  $\frac{1}{4}$  sec. cor., marked on brass cap  $\frac{1}{4} S 8$  on N. half and  $S 17$  on S. half, dig pits  $18 \times 18 \times 12$  ins., E. and W. of post 3 ft. dist, raise a mound of earth  $3\frac{1}{2}$  ft. base,  $1\frac{1}{2}$  ft. high N. of cor.

41.10 Same wash, course NW.

Subdivision of T. 20 S., R. 26 E.

Cham.

Hence ascend towards high sandstone cliffs.

79.85 Base of sandstone cliff and solid bed rock, bears N. and S.

The point for closing cor. of secs. 8 and 17 will fall on solid sandstone cliff where cor. cannot be set, I therefore perpetuate cor. on solid ground as follows:

Set an iron post, 3 ft. long, 2 ins. in dia, 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for witness cor. to the closing cor. of secs. 8 and 17 on the Utah-Colorado State boundary line, with brass cap marked

T 20 S R 26 E

U	<u>S 8</u>	. WCC
	S 17	
	1910	

from which.

A pinyon, 8 ins. diam., bears N.  $60^{\circ} 15' W.$ ,  
131 lbs. dist., marked

W C C C T 20 S R 26 E S 8 B.T.

A pinyon, 10 ins. diam., bears S.  $65^{\circ} W.$ ,  
130 lbs. dist., marked.

W C C C T 20 S R 26 E S 17 B.T.

Note: On account of natural obstacles I am unable to set post in the ground.  
Ascend abruptly over ledges.

79.76 Intersect Utah-Colorado boundary line  
90.16 chs. N.  $0^{\circ} 17' E.$  of the 142nd mil.  
cor. heretofore described.

Point for closing cor. falls on steep slope of bed rock where cor. cannot be set.

Land mountainous, draining W.  
Soil sandy and rocky on sandy sub-soil, rather moist.

Undergrowth sage brush on W. 27 chs.

Subdivision of T. 20 S., R. 26 E.

chains.

Timber, cedar and piñon.  
Land mountainous or heavily  
timbered 79.76 cha.

September 10, 1910.

Retracement of subdivisions of  
T. 20 S., R. 26 E.

Sept 9: For solar observation see  
line bet. secs. 20 and 29, page 8.  
From the true cor. point of secs.  
19, 20, 29 and 30 heretofore described  
9 rem.

West, retracing line bet. secs. 19 and 30.  
Wagon road, from Stubbs ranch to  
West water, lat. ab., bears NW. and SE.  
Intersect the old  $\frac{1}{4}$  sec. cor. which  
is a sandstone  $20 \times 17 \times 5$  ins. firmly  
set in a mound of stone and marked  
and witnessed as described by the  
Surveyor General.

The true bearing of this line is West,  
and the distance is 39.77 cha.  
From the  $\frac{1}{4}$  sec. cor. I continue  
West.

140.20 Fall 17 tks. N. of the cor. of secs.  
19, 24, 25 and 30 on the W. bdy. of  
the sp. heretofore described.

The true bearing of this line is  
71.89° 45' W., and the distance is 140.20 cha.

Sept. 9: The sky is overcast at noon,  
observations for lat. are impossible.

September 9, 1910

Sept. 10: At 8<sup>h</sup>. 27<sup>m</sup>. a.m. l.m.t., I set  
off 39° 03' N. on the lat. arc; 5° 08' N.  
on the decl. arc; and determine a  
meridian with the solar at the true  
cor. point of secs. 19, 20, 29 and 30.

Retracement of Subdivisions of T. 20 S., R. 26 E.

chains.	
45.05	<p>Hence I run North, retracing line bet. secs. 19 and 20 fall 5 lks. W. of the witness cor. to the <math>\frac{1}{4}</math> sec. cor. which is a cross on solid sandstone bedrock. No accessories to cor.</p> <p>The true bearing of this line is <math>71.0^{\circ}04'E</math>, and the distance is 45.05 chs. From the witness cor. I continue North.</p>
35.32	<p>Intersect the cor. of secs. 17, 18, 19 and 20 heretofore described.</p>
40.06	<p>North, retracing line bet. secs. 17 and 18. fall 15 lks. W. of the <math>\frac{1}{4}</math> sec. cor. which is a sandstone, <math>20 \times 10 \times 3</math> ins. above ground, firmly set and marked and witnessed as described by the Surveyor General.</p> <p>The true bearing of this line is <math>71.0^{\circ}13'E</math>, and the distance is 40.06 chs. From the <math>\frac{1}{4}</math> sec. cor. I continue North.</p>
39.96	<p>Intersect the cor. of secs. 7, 8, 17 and 18 heretofore described.</p>

September 10, 1910

#### General Description

This township contains rough mountainous and gently rolling land. The soil of the gently rolling land which is found in sec. 32 is a rich sandy loam and has a deep sandy loam sub-soil. This land is capable of producing abundant crops with irrigation. The soil of the remaining part is all rocky and sandy of sandstone formation and may be classed as 4th. rate.

## General Description

An abundant growth of scrub cedar and piñon timber prevails through out the township, but is of no commercial value.

The township is not very well watered. The little Dolores river, which carries but little water flows through secs. 31 and 32 in a westerly direction. Two settlers, D.M. Snyder and L.P. Stubbs live in sec. 32 and are cultivating small parcels of land. They may cultivate more by using water from the Little Dolores river. There is no indication of mineral in the tp.

Howard Wmiller  
M.P. Instrument man.

BOUNDARIES OF T.20 S., R.26 E.  
Latitudes, Departures, and Closing Errors.

Lines Designated	True Bearing	Dist.	Latitudes		Departu
			N. chs.	S. chs.	E. chs.
W.Bdy.T.20 S.R.26 E.	North	160.66	160.66	.....	.....
N.Bdy.Sec.30 T.20 S.R.26 E.	N. $89^{\circ}45' E.$	40.20	.18	.....	40.20
N.Bdy.Sec.30 T.20 S.R.26 E.	East	39.77	.....	.....	39.77
W.Bdy.Sec.20 T.20 S.R.26 E.	N. $0^{\circ}04' E.$	45.05	45.05	.....	.05
W.Bdy.Sec.20 T.20 S.R.26 E.	North	35.32	35.32	.....	.....
W.Bdy.Sec.17 T.20 S.R.26 E.	N. $0^{\circ}13' E.$	40.06	40.06	.....	.15
W.Bdy.Sec.17 T.20 S.R.26 E.	North	39.96	39.96	.....	.....
W.Bdy.Sec.8 T.20 S.R.26 E.	N. $0^{\circ}01' E.$	80.00	80.00	.....	.02
N.Bdy.Sec.8 T.20 S.R.26 E.	East	80.11	.....	.....	80.11
Utah-Colo.Bdy.Line T.20 S.R.26 E.	S. $0^{\circ}17' W.$	170.63	.....	170.63	.....
Utah-Colo.Bdy.Line T.20 S.R.26 E.	S. $0^{\circ}13' W.$	80.97	.....	80.97	.....
Utah-Colo.Bdy.Line T.20 S.R.26 E.	S. $0^{\circ}17' W.$	149.97	.....	149.97	.....
S.Bdy.T.20 S.R.26 E.	West	158.33	.....	.....	158.33
Convergency					.11
			401.23	401.57	160.41
				401.23	160.22
	Error in lat.				.34
	Error in dep.				.19

## FINAL OATHS OF DEPUTY SURVEYOR AND HIS ASSISTANTS.

## LIST OF NAMES.

A list of the names of the individuals employed by Howard W. Miller,  
Instrumentman, United States Deputy Surveyor, to assist in running, measuring, and  
marking the lines and corners described in the foregoing field notes of the survey of the subdivision  
& retracements of township 20 south, range 26 east  
S.L.B & M., Utah, showing the respective capacities in which they acted:

Fred Wright, Chainman.  
Karl Rothermund, Chainman.  
Roscoe Hallett, Moundman.  
Edward Jones, Axman, Moundman.  
Bear Eagle, Axman.  
Bear Eagle, Flagman.

## FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted

Howard W. Miller, Instrumentman, United States Deputy Surveyor, in surveying all  
those parts or portions of the subdivisions and retracements  
of township 20 south, range 26 east

Lake Base & meridian, State of Utah, of the Salt  
in the foregoing field notes as having been surveyed by him and under his direction; and that said survey  
has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the  
corner monuments established, according to the instructions furnished by the United States Surveyor  
General for Utah.

Fred Wright, Chainman.  
Karl Rothermund, Chainman.  
Roscoe Hallett, Moundman.  
Edward Jones, Moundman.  
Bear Eagle, Axman.  
Bear Eagle, Flagman.

Subscribed and sworn to before me this 10<sup>th</sup>  
day of September, 1900



Howard W. Miller,  
U.S. Instrumentman

FINAL OATH OF UNITED STATES DEPUTY SURVEYOR.

I, \_\_\_\_\_, United States Deputy Surveyor \_\_\_\_\_, solemnly swear that, in pursuance of a contract received from \_\_\_\_\_, bearing date of \_\_\_\_\_, United States Surveyor General for \_\_\_\_\_, day of \_\_\_\_\_, 190\_\_\_\_\_, I have well, faithfully, and truly, in my proper person, and in strict conformity with the instructions furnished by the United States Surveyor General for \_\_\_\_\_, the Manual of Surveying Instructions, and the laws of the United States, surveyed all those parts or portions of \_\_\_\_\_.

For final oath of transitman see book "Z-1" T. 24 S., R. 26 E.

..... of the \_\_\_\_\_ meridian, in the \_\_\_\_\_, which are represented by the foregoing field notes as having been surveyed by me, and under my direction; and I do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the Manual of Surveying Instructions, and the special written instructions of the United States Surveyor General for \_\_\_\_\_, and in the specific manner described in the field notes, and the foregoing are the original field notes of such survey.

United States Deputy Surveyor

Subscribed by said \_\_\_\_\_, and sworn to before me }  
this \_\_\_\_\_ day of \_\_\_\_\_, 190\_\_\_\_\_. }

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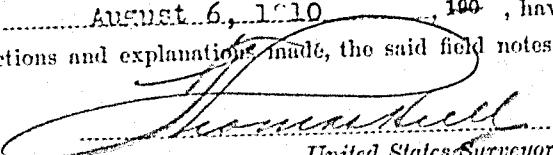
APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Salt Lake City, Utah, June 25, 1913

The foregoing field notes of the survey of \_\_\_\_\_ the subdivisional lines of Township No. 20 South, Range No. 26 East of the Salt Lake Base and Meridian.

executed by \_\_\_\_\_ Howard W. Miller  
under his \_\_\_\_\_ special instructions dated August 6, 1910, 190\_\_\_\_\_, have been critically examined, and the necessary corrections and explanations made, the said field notes surveys they describe, are hereby approved.

  
Howard W. Miller  
United States Surveyor

I certify that the foregoing transcript of the field notes of the above-described surveys in \_\_\_\_\_, has been correctly copied from the original notes on file in this office.

United States Surveyor

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Book "J"

G. A. GEMAN

## FIELD NOTES

X.S.R.

OF THE SURVEY OF THE

South and east boundaries of  
 T. 21 S., R. 25 E.

of the Salt Lake Base and Meridian, Utah

AS SURVEYED BY

Howard C. Miller, United States Deputy Surveyor,  
 Triangulation

assignment Group 1  
 under his Contract No. 41, dated August 6, 1900

Survey commenced September 18, 1900

Survey completed September 22, 1900

\_\_\_\_\_  
NAMES AND DUTIES OF ASSISTANTS.

Fred Wright, chairman

Karl Rothermund, chairman

Roscoe C. Hallett, moundsman

Edward Jones, chairman

Ben Egle, flagman

BOOK A-378

INDEX DIAGRAM.

Township 21 South, Range 25 East

6	8	4	3	2	1	18
7	5	0	10	11	12	16
18	17	16	15	14	13	15
19	20	21	22	23	24	13
20	29	28	27	26	25	12
21	22	23	24	25	26	11
2	4	5	7	8	10	

Meanders Page.....

PRELIMINARY OATHS OF ASSISTANTS.

WE, Fred Wright

and Karl Rother

do solemnly swear that we will well and faithfully execute the duties of chainmen; that we will chain upon even and uneven ground, and plumb the tally pins, either by sticking or dropping them; we will report the true distances to all notable objects, and the true lengths of all lines that we will measure, to the best of our skill and ability, and in accordance with instructions given us, in the sole

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the south and east boundaries T. 21 S. R. &  
of the S.L.B. & M., Utah.

Fred Wright

Karl Rother

Subscribed and sworn to before me this 18

day of September, 1900



I, Roscoe C. Hallett and

WE, Roscoe C. Hallett and

do solemnly swear that we will well and truly perform the duties of moundmen in the establish-

ment of corners, according to the instructions given us, to the best of our skill and ability, in the

the south and east boundaries T. 21 S. R. &

of the S.L.B. & M., Utah.

Roscoe C. Hallett

Subscribed and sworn to before me this 18

day of September, 1900



I, Edward Jones and

WE, Edward Jones and

do solemnly swear that we will well and truly perform the duties of axmen in the establish-

ment and other duties, according to instructions given us, to the best of our skill and ability, in

the south and east boundaries T. 21 S. R. &

of the S.L.B. & M., Utah.

Edward Jones

Subscribed and sworn to before me this 18

day of September, 1900



I, Ben Eagle

, do solemnly swear that I will well and truly perform the duties of flagman according to instructions given me, to the best of my skill and ability, in the survey of the south and east boundaries of T. 21 S. R. & of the S.L.B. & M., Utah.

Ben Eagle

Subscribed and sworn to before me this 18

day of September, 1900



Howard W. Miles  
Instrumentman

chains. South boundary of T 21 S., R 25 E.

Survey commenced September 18, 1910  
and executed with a W. & L. E.  
Gurley solar compass No. 1043.  
For description and test of instru-  
ment see book "A" of this survey.  
I examine the adjustments of the  
compass & correct the level and  
collimation errors; then, to test  
the solar apparatus, by comparing  
its indications, resulting from  
solar observations, made during  
a.m. & p.m. hours, with a mer-  
idian determined by observations  
on Polaris, I proceed as follows:  
At the cor. of Tps. 21+22 S., Rs. 24+25  
E. which is a sandstone 16x10x5  
ins., above ground, firmly set,  
and marked and witnessed as  
described by the surveyor general.  
Latitude,  $38^{\circ} 56' 29''$  N., longitude  
 $109^{\circ} 14' 10''$  W. I set off  $38^{\circ} 56.5'$  N. on  
the lat. arc;  $1^{\circ} 57' 00''$  on the  
decl. arc; and at  $4^{\text{h}} 24^{\text{m}}$  p.m. l.m.t.  
determine with the solar a  
meridian, and mark a point  
thereof, on a stone firmly set  
in the ground, 5 chs. N. of the  
corner.

At  $7^{\text{h}} 44^{\text{m}}$ . p.m. l.m.t. I observe  
Polaris at eastern elongation,  
in accordance with the Manual  
of Instructions, and mark a  
point in the line thus deter-  
mined, on a peg driven in the  
ground, 5 chs. N. of my station.

September 18-1910

September 19: At  $7^{\text{h}} 15^{\text{m}}$  a.m..  
l.m.t. I lay off the azimuth  
of Polaris,  $1^{\circ} 30.6'$  to the west

South boundary of T. 21 S., R. 25 E.

chain

and find that the Polaris meridian agrees with the solar meridian determined September 12. At 8<sup>h</sup> 24<sup>m</sup> a. m. l. m. t. I set off, 38° 56.5' N. on the lat. arc. 1° 41' N. on the decl. arc; and determine a meridian with the solar. This meridian, also agrees with the Polaris meridian and the solar meridian of September 18. I therefore conclude that the instrument is in perfect adjustment. The magnetic bearing of the true meridian at 8<sup>h</sup> 30 m. a. m. is N. 15° 35' W.; the angle thus determined gives the magnetic declination 15° 35' E.

The marks on the top corner already described are very dim. I destroy all traces of the old corner, and re-establish it at the same point, as follows:

Set an iron post, 3 ft. long, 3 ms. in dia., 24 ms. in the ground for cor. of tps 21 + 22 S., Rs 24 + 25 E. marked on brass caps.

T 21 S on N. half

T 22 S on S. half

R 24 E S 36 in NW,

R 25 E S 31 in NE

R 25 E S 6 in SE, and

R 24 E S 1 in SW quadrant  
dig pits 24 x 24 x 12 ms., on each  
line; N., E., and W. with ft., and S. of  
post, 8 ft. dist.; raise a mound  
of earth 5 ft. base, 2½ ft. high S.  
of cor.

Thence I run.

East, bet. secs. 6 + 31.

chain South boundary of T. 21 S. R. 25 E.

20.50

Gradually descend over gently rolling land sloping East.

27.67

Wash, 50 lks. wide, 5 ft. deep, course NW.  
Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for  $\frac{1}{4}$  sec. cor., marked on brass cap  
 $\frac{1}{4} S 31$  on N. half & S 6 on S. half,  
dig pits,  $18 \times 18 \times 12$  ins. E. & W. of post, 3 ft. dist.; raise a mound of earth  $3\frac{1}{2}$  ft. base  $1\frac{1}{2}$  ft. high  
N. of corner.

40.22

Road, bears NE & SW.

48.00

Wash, 15 lks. wide, course N.  $20^\circ$  E.

53.00

Old road, bears N.  $20^\circ$  E. & S.  $20^\circ$  W.

61.70

Enter scrub cedar & Juniper brush.

Ascend over land facing W.

Brush corral bears N. 1 ch.

73.67

Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in the ground, for cor. of secs. 5, 6, 30 & 32.

marked on brass caps.

T 21 S R 25 E on N. half,

T 22 S on S. half,

S 31 in NW.,

S 32 in NE.,

S 5 in SE, and

S 6 in SW, quadrant,

raise a mound of stone, 2 ft. base,  $1\frac{1}{2}$  ft. high, W. of cor.

Pits impracticable

rees within limits but all too poor to mark.

Land rolling.

W 61.70 chs. nearly level land with east and north slopes. Some undergrowth of chadscale, good bunch grass. Soil, rich sandy loam, sub soil, sandy loam, rather moist. E 18.30 chs. W. slope rocky land no undergrowth, no grass. Soil,

South boundary of T 21 S., R 25 E.

Chains

soil  
Unit  
prop  
Gen  
Uni

		rocky, sub soil, rocky + sandy. Timber, scrub cedar + juniper on E 17. 30 chs.
		East, bet sec. 5 + 32. Over mountainous land thru forest of scrub cedar + juniper. Ascend.
	1.75	Low ridge, bears N.E. + S.W. Descend.
	12.00	Hollow, drains S.W., ascend.
	30.00	Ridge 100 ft. above hollow, bears N.E. + S.W.
	40.00	Hence over land facing N. Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for 1/4 sec. cor. marked on brass Cap 1/4 S 32 on N. half and S 5 on S. half, raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.
	41.75	Pits impracticable
	45.50	Spur, projects N. Descend 75 ft.
	80.00	Gulch, drains N. Hence ascend 125 ft. over land sloping N.W. Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in the ground and a mound of stone for cor. of sec. 4, 5, 32, 33, marked on brass cap T 21 S R 25 E on N. half T 22 S on S. half, S 32 in NW, S 33 in NE, S 4 in SE and S 5 in SW quadrants raise a mound of stone 2 ft. ba. 1 1/2 ft. high W. of corner Pits impracticable.

chains South boundary T. 21 S., R. 25 E.

Trees within limits but all too poor to mark.  
Land, mountainous with N + NW slopes, some shale scale undergrowth, no grass. soil, rocky & gravelly very poor, sub-soil, rocky, bed rock within 2 ft of surface. Timber, scrub cedar & Juniper.

September 19: At this sec. cor. I set off  $1^{\circ} 37' N.$  on the decl. arc; and at  $11^{\circ} 54' \text{ a.m. l.m.t.}$  observe the sun on the meridian; the resulting latitude is  $38^{\circ} 56.5$ .

East, bet. secs. 4 & 33.

Over mountainous land, thru forest of cedars & juniper.

Ascend 125 ft.

Ridge, bears N. & S.

Descend towards coach creek, canyon over land sloping SE 100 ft. below ridge.

Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for  $\frac{1}{4}$  sec. cor. marked on brass cap  $\frac{1}{4}$  S 33 on N. half and S 4 on S half, raise a mound of stone, 2 ft. base,  $1\frac{1}{2}$  ft. high. N. of corner.

Pits impracticable

46.00 N. edge of Coach Creek canyon and ledge 300 ft. high.

59.16 To West ledge of coach creek canyon, ledge 250 ft. high bears NE & S.  $80^{\circ} W.$  I am unable to chain across this canyon. To determine the distance, I set a flag at this point; then place my transit on line on east side of canyon, measure a base S.  $21^{\circ} W.$

South boundary T. 21 S., R. 25 E.  
chains.

5.10 chs. (This is the largest base that I am able to get in any direction so that I may be able to see my flag) to a point, from which the flag bears  $77^{\circ} 35' W.$ ; from the flag the S. end of the base bears  $S 75^{\circ} 35' E.$  By separate measurement of each angle they are found respectively  $69^{\circ}$ ,  $96^{\circ} 35'$ ,  $\angle 14^{\circ} 25'$ , therefore  $\log 5.10 + \log \sin 96^{\circ} 35' + \log \sin 14^{\circ} 25'$  or

$$\log 5.10 \text{ do.} = .707570$$

$$\log \sin 96^{\circ} 35' = 9.997127-10.$$

$$\log \sin 14^{\circ} 25' = 0.603840$$

$$\log 11,308537-10 = 20.35 \text{ chs.}$$

also,  $59.16 + 20.35$  makes

79.51 To east side Coach Creek canyon bears  $NE + S. 60^{\circ} W.$  This canyon is about 350 ft. deep. Coach Creek which divides the canyon has some water in it.

80.00 Set an iron post, 3 ft. long, 3 in. dia., 2 ft. in the ground for cor. of secs. 3, 4, 33 & 34, marked on brass cap.

T 21 S R 25 E. on N. half

T 22 S on S. half.

S 33 in NW.,

S 34 in NE.,

S 3 in SE., and

S 4 in SW. quadrant,

raise a mound of stone, 2 ft. base,  $1\frac{1}{2}$  ft. high, NW. of corner. Land mountainous, NW. & SE. slopes soil rocky, sub soil rocky, very little undergrowth, no grass. Timber, cedar & juniper.

September 19, 1910

September 20: At 7<sup>h</sup> 24<sup>m</sup> a.m., l.m.

chains South boundary of T 21 S. R 25 E.

I set off  $38^{\circ} 56' 5''$  N. on the lat. arc,  
 $1^{\circ} 20' 60''$  on the decl. arc and  
determine a meridian with  
the solar at the corner of secs.  
3, 4, 33 & 34 heretofore described  
Hence true

East, bet. secs. 3 & 34

over mountainous land, ascending  
thru forest of cedar & pinon.

16.05 West edge of a box canyon & ledges  
across which I am unable to  
chain. To determine the distance  
I set a flag on line on east edge  
then measure a base line  $S 10^{\circ} 30' W$   
1600 chs. to a point, whence flag bears  
 $N 68^{\circ} 52' E$ . From the flag the south  
end of the base bears  $S 68^{\circ} 52' W$ ;  
by separate measurement of each  
angle they are found respectively  
 $100^{\circ} 30'$ ,  $58^{\circ} 22'$  &  $21^{\circ} 08'$ ; therefore  
 $\log 16.00 \text{ chs} \times \log \sin 58^{\circ} 22' + \text{cologin}$   
 $21^{\circ} 08'$  or

$$\begin{aligned}\log 16 &= .204120 \\ \log \sin 58^{\circ} 22' &= 9.930145 - 10 \\ \text{cologin } 21^{\circ} 08' &= .443047\end{aligned}$$

$$\log .577312 = 37.78 \text{ chs.}$$

also 16.05 + 37.78 makes

to east side of canyon and  
ledges bears NW. & S.

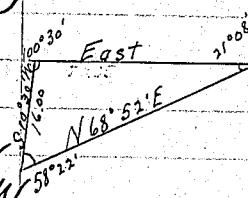
I am unable to place the  $\frac{1}{4}$  cor.  
at its proper place, <sup>at 40.00 chs.</sup> on account,  
of the ledges; therefore at

Set an iron post, 3 ft. long, 1 in.  
in dia., 26 ms. in the ground  
for witness corner to the  $\frac{1}{4}$  sec.

Cor. marked on brass cap

T 21 S R 25 E S 34 on N. half, S 3  
on S. half, with WC  $\frac{1}{4}$  to the  
west, from which

A pinon, 10 ms. diam., bears  $S 58^{\circ} E$ ,



chain South boundary of T. 21 S., R. 25 E.

10 lks. dist. marked

WC  $\frac{1}{4}$  S 3 BT

A piñon, 8 ins. diam., bears N.  $48\frac{3}{4}^{\circ}$  E.,  
44 lks. dist. marked

WC  $\frac{1}{4}$  S 34 BT

Gradually ascend over land  
facing NW.

80.00 Set an iron post, 3 ft. long, 3 ins. in  
dia., 24 ins. in the ground, for  
cor. of secs. 2, 3, 34 + 35, marked  
on brass cap

T 21 S R 25 E on N. half,

T 22 S on S. half,

S 34 in NW.,

S 35 in NE.,

S 2 in SE and

S 3 in SW. quadrant,

from which

A piñon, 10 ins. diam., bears N.  $72\frac{1}{2}^{\circ}$  E.

155 lks. dist. marked

T 21 S R 25 E S 35 BT

A piñon, 11 ins. diam., bears S.  $56^{\circ}$  E.

95 lks. dist. marked

T 22 S R 25 E S 2 BT

A piñon, 16 ins. diam., bears S.  $38^{\circ}$  W.

96 lks. dist. marked

T 22 S R 25 E S 3 BT

No tree in sec. 34,  
raise a mound of stone, 2 ft. base,  
 $1\frac{1}{2}$  ft. high, W. of corner.

Land, mountainous. with south  
NW. slopes. No undergrowth. no grass.  
Soil, rocky, 4<sup>th</sup> rate, sub-soil, rocky  
& sandy.

Timber, scrub cedar & piñon.

East, bet. secs. 2 + 35

Over mountainous land, thru  
forest of cedar & piñon

Ledge & west side of canyon, bear  
N. & S.

South boundary of T. 21 S., R. 25 E.

	Descend 175 ft
15.00	Wash in canyon, course NW. Ascend 225 ft.
28.20	Ridge, bears N. & S. Descend
36.00	Leave cedar & juniper, bears N. & S. Hence over open valley.
40.00	Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for $\frac{1}{4}$ sec. cor., marked on brass cap $\frac{1}{4} S 35$ on N. & S. & on S. half, dig pits $18 \times 18 \times 12$ ins. E. & W. of post, 3 ft. dist., raise a mound of earth $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high P. of corner
49.70	Wash, course S.
60.00	Enter scattering cedar & juniper, bears NE. & S.
80.00	Set an iron post, 3 ft. long, 3 ins. in dia, 24 ins. in the ground for cor. of secs. 1, 2, 35 & 36 marked on brass cap T 21 S R 25 E. on N. half T 22 S on S. half, S 35 in NW, S 36 in NE., S 1 in SE. and S 2 in SW. quadrant. dig pits $18 \times 18 \times 12$ ins. in each sec. $5\frac{1}{2}$ ft. dist., raise a mound of earth 4 ft. base 2 ft. high W. of cor.
	Sand mountainous, with East and N slopes. E. 44 chs open valley, undergrowth, sage brush, some good grass, soil, rich sandy loam, sub soil sandy loam + gravelly. W 36 chs. soil rocky, sub soil, rocky & sandy.
	Timber cedar & juniper

South boundary of T. 21 S., R. 25 E.  
Chamis

	East, bet. secs. 1 + 36.
	Over rolling mountainous land thru forest of cedar + juniper.
140.00	Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for $\frac{1}{4}$ sec. cor. marked on brass cap $\frac{1}{4} S 36$ on N. half, and S 1 on S. half raise a mound of stone, 2 ft. base, 1 $\frac{1}{2}$ ft. high, N. of cor. Post impracticable Ascend over land facing east.
64.60	Top 35 ft. ledge, bears N. + S. Continue to ascend.
80.00	On top of ridge, bears $N 30^{\circ} E.$ + $S 30^{\circ} W.$ Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in the ground for corner of Tps. 21 + 22 S. R. 25 + 26 E. mkd on brass cap $T 21 S$ on N. half. $T 22 S$ on S. half. $R 25 E S 36$ in NW., $R 26 E S 31$ in NE., $R 26 E S 6$ in SE. and $R 25 E S 1$ in SW. quadrant, dig pits $24 \times 24 \times 12$ ins., on each line, E., W., and N., 4 ft., and S. of post, 8 ft. dist., raise a mound of earth 5 ft. base, 2 $\frac{1}{2}$ ft. high S. of corner. Land, mountainous with west slope. some sage brush undergrowth no grass. Soil, sandy + gravelly, sub soil, rocky + sandy, very poor. Timber cedar + juniper. September 20: At this tp cor. I set off $1^{\circ} 14' N.$ on the decl. arc: and at $54^{\circ} 44' W.$ m. t. observe the sun on the meridian; the resulting lat is $38^{\circ} 56' 3''$ .

chasus East boundary T. 21 S., R. 25 E.

	From the cor. of Tps. 21 & 22 S., Rs 25 & 26 East., heretofore described true
	North, bet. secs. 31 & 36. Over mountainous land, gradually descending thru forest of cedars cotton.
4000	Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for $\frac{1}{4}$ sec. cor. marked on brass cap $\frac{1}{4} S 36$ on W. half & S 31 on E. half, from which: A cotton, 7 ins. diam., bears N. $85\frac{1}{2}^{\circ}$ E. 72 lks. dist. marked $\frac{1}{4} S 31$ BT.
	A cedar, 6 ins. diam., bears N. $74\frac{1}{2}^{\circ}$ W. 70 lks. dist., marked $\frac{1}{4} S 36$ BT.
52.00	Ridge, and South side of Coach Creek canyon, bears E. & W. Descend steep S. slope
65.00	Bottom of canyon & creek, 15 lks. wide, very little water, coarse W. Ascend from canyon over granite ledges.
76.55	Ridge, 325 ft. above creek, bears E. & W. Descend.
80.00	Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in the ground for cor. of secs. 25, 30, 31 & 36, marked on brass cap T 21 S on N. half R 25 E S 25 in NW, R 26 E S 30 in NE, S 31 in SE. and S 36 in SW. quadrant, raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high W. of corner. Pits impracticable

East boundary of T. 21 S., R. 25 E.  
chains.

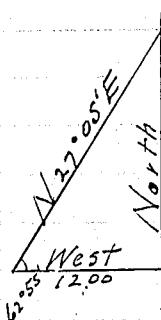
Trees with limits but too poor to mark  
Land mountainous with N. & S. slopes. some undergrowth of Chaparral, no grass, soil, rocky, sub soil, sandy & rocky, very poor. Timber, cedar & pinon.

North, bet. secs. 25 & 30  
Over mountainous land, thru forest of cedar & pinon.  
Descend

- 4.70 Road, bears E. & W.  
 5.75 Wash, course W.  
 8.00 Base of high mesa, & rock wall 350 ft. high, up which I cannot climb. To determine the distance I set a flag on line on top of mesa, then measure a base West 12 chs. to a point from which flag bears  $N. 27^{\circ} 05' E.$  From the flag the west end of the base bears  $S. 27^{\circ} 05' W.$ , therefore tan  $62^{\circ} 55' \times$  base or  $1.955 \times 12 = 23.46$  which, added to 8 chs. makes  
 31.46 To top of mesa, bears East & West.  
 34.70 Descend.  
 40.00 150 ft. below top  
 Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for  $\frac{1}{4}$  sec. cor. marked on brass cap  $\frac{1}{4} S 25$  on W. half &  $S 30$  on E. half, from which A pinon, 5 ins. diam., bears East, 7 lks. dist. marked  $\frac{1}{4} S 30$  BT

A Cedar quis. diam., bears  $S 8\frac{1}{2}^{\circ} W.$ , 40 lks. dist., marked  $\frac{1}{4} S 25$  BT

September 20-1910



chain

# East boundary of T 21 S. R 25 E.

September 21: at 8<sup>h</sup> 23<sup>m</sup> a.m.  
I m.t. I set off  $38^{\circ} 57'$  on the  
lat. arc;  $0^{\circ} 54' 57''$  on the decl. arc  
and determine a meridian with  
the solar at the  $\frac{1}{4}$  sec. cor. bet.  
secs. 25 + 30

Hence true  
North.

Descend over steep mountainous  
land facing N. + NW.

80.00 Set an iron post, 3 ft. long, 3 in. in  
dia., 24 in. in the ground for  
cor. of secs. 19, 24, 25 + 30 marked  
on brass cap

T 21 S on N. half

R 25 E S 24 in NW,

R 26 E S 19 in NE,

S 30 in SE, and

S 25 in SW quadrant,

from which

A juniper, 11 in. diam., bears N.  $20^{\circ}$  E.

7 lks. dist., marked

T 21 S R 26 E S 19 BT

A juniper, 8 in. diam., bears S.  $52^{\circ}$  E.

106 lks. dist., marked

T 21 S R 26 E S 30 BT

A juniper, 5 in. diam., bears S.  $37\frac{1}{2}^{\circ}$  W.

140 lks. dist., marked

T 21 S R 25 E S 25 BT

A juniper 7 in. diam., bears N.  $59\frac{3}{4}^{\circ}$  W.

57 lks. dist., marked

T 21 S R 25 E S 24 BT

Land, mountainous, with  
steep N. + NW slope. Undergrowth  
chaparral, no grass. Soil, very  
poor, rocky + sandy, sub-soil  
rocky, bed rock close to surface.  
Timber cedar + juniper

North bet. secs. 29 + 24

East boundary of T. 21 S.R. 25 E.

chains.

	Over mountainous land thru dense forest of cedar & Pinon Spur, projects N. $80^{\circ}$ W. Descend 45 ft.
9.25	Hollow - drains West. Ascend over ledges.
13.30	Spur, 75 ft. above hollow, projects W. Descend abruptly.
18.50	Hollow, course S. $80^{\circ}$ W. Ascend 100 ft.
26.30	Ridge, bears E. & W. a high pinnacle bears W. 10 chs. Descend land sloping NE.
40.00	Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for $\frac{1}{2}$ sec. cor. marked on brass cap $\frac{1}{4} S 24$ on W. half, from which a cedar, 8 ins. diam., bears S. $63\frac{1}{2}^{\circ}$ E., 50 lks. dist., marked $\frac{1}{4} S 19$ BT
	A cedar, 10 ins. diam., bears N. $52\frac{1}{4}^{\circ}$ E. 15 $\frac{1}{2}$ lks. dist., marked $\frac{1}{4} S 24$ BT.
55.00	Wash in canyon, 50 lks. wide, 200 ft. below ridge, course W. Hence ascend over land sloping SW.
70.00	Ridge, 250 ft. above canyon, bears E. ~ W. September 21: at this station I set off $0^{\circ} 57'$ N. on the decl. arc; and at $11^{\prime} 53''$ m. l. m. t. observe the sun on the meridian; the resulting latitude is. $38^{\circ} 59'$ . Descend over boulders & ledges, 17.5 ft.
76.65	Canyon & wash, 25 lks. wide, course NW. Hence over land sloping west.
80.00	Set an iron post, 3 ft. long, 3 ins. in

chain East boundary of T 21 S., R 25 E.

dia., 24 ins. in the ground for  
cor. of secs. 13, 18, 19 + 24, mkd  
on base cap

T 21 S. on N. half

R 25 E S 13 in NW,

R 26 E S 18 in NE,

S 19 in SE. and

S 24 in SW. quadrant,

raise a mound of stone, 2 ft.  
base,  $1\frac{1}{2}$  ft. high W. of corner.

Pits impracticable

Trees within limits in all secs.  
but too poor to mark.

Land mountainous with a  
westerly drain, cut by deep  
canyons with steep N. + S. slopes.  
No undergrowth, no grass.

Soil, rocky + clay. sub-soil, rocky  
+ clay, rather moist.

Timber, dense cedar + juniper.

North bet. secs. 13 + 18.

Over mountainous land  
thru dense forest of cedar +  
juniper.

Ascend S. slope of narrow mesa.

9.65 Top of 75 ft. ledge + mesa, base  
E + W.

10.00 Descend NE. slope of mesa over  
series of small ledges.

38.00 Marble canyon + wash, 50 lks.  
wide, 625 ft. below mesa,  
course NW.

Hence over land favor SW.

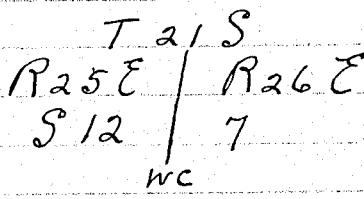
40.00 Set an iron post, 2 ft. long, 1 in. in  
dia., 26 ins. in the ground for  
 $\frac{1}{4}$  sec. cor. marked on base

cap  $\frac{1}{4}$  S 13 on W. half + S 18 on  
E. half, raise a mound of stone  
2 ft. base  $1\frac{1}{2}$  ft. high W. of cor.

East boundary of T. 21 S., R. 25 E.

*claim*

- Pits impracticable  
Trees within limits but too poor to mark.
- 72.00 Base of steep ascent of mesa + ledges bears E. + W.  
Ascend.
- 80.00 Point for cor. of secs. 7, 12, 13 + 18 falls on solid ledge of rock where it cannot be set
- 81.60 Set an iron post, 3 ft. long, 3 in. dia., 24 in. in the ground for witness cor to secs. 7, 12, 13 + 18 marked on brass cap, (top of page representing north)



raise a mound of stone, 2 ft. base, 1 $\frac{1}{2}$  ft. high W. of cor.

Land, mountainous, cut by deep canyons with westerly drains and steep N. + S. slopes of ridges. Under-growth, some sage brush, no grass. Soil, stony + gravelly, sub-soil - rocky. Timber scrub cedar + juniper.

September 21, 1910

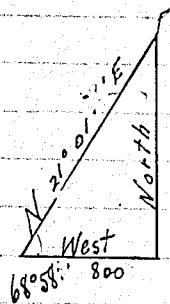
September 22: At 7<sup>h</sup> 53<sup>m</sup> a.m. l.m.t  
I set off 39° 00' N. on the lat. arc; 0° 32' 10" on the decl. arc; and determine a meridian with the solar at the witness corner to secs. 7, 12, 13 + 18, heretofore described:  
Hence from

North, bet. secs. 7 + 12, Counting distances from true corner point.

1.60 The witness cor. to secs. 7, 12, 13 + 18

East boundary of T. 21 S.R. 25 E.

- chains.
- 1.80 Top of mesa + ledges. 300 ft. above base, bears N.E. - S.W.  
Hence over mesa top.
- 25.00 To South side of an impassable canyon, vertical walls 100 to 300 ft. high, across which, I cannot chain. To determine the distance I measure a base west 8 chs to a point, from which flag bears,  $71.21^{\circ} 06' E.$ , therefore taking  $68^{\circ} 58'$  x base or  $2.60 \times 8 \text{ chs} = 20.80$  which added to 25.00 makes 45.80  
To N. side of canyon bears N.W. + S.E.
- 40.00 Point for  $\frac{1}{4}$  falls on ledges in canyon where it cannot be set. Therefore at
- 45.80 Set an iron post 3 ft. long, 1 in. in dia., 26 ins. in the ground for witness cor. to the  $\frac{1}{4}$  sec. cor. marked on brass cap T 21 S on N half, R 26 E S 7 on E. half R 25 E S 12 on W. half, with WC  $\frac{1}{4}$  to the south, raise a mound of stone, 2 ft. base,  $1\frac{1}{2}$  ft. high, W. of cor.  
It's impracticable.
- 55.30 To S. side of canyon, bears  $S80^{\circ} E + W.$  about 8 chs. Canyon heads east about 15 chs.  
Descend over ledges into canyon.
- 64.80 Bottom of canyon + wash, 300 ft below top, course west.  
Ascend
- 75.35 Top of N. side of canyon + ledge, 100 ft. high, bears E. + W.  
Hence over mesa top.
- 80.00 Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins in the ground for cor. of secs. 1, 6, 7 + 12, marked on brass cap.



East boundary T. 21 S.R. 25 E.  
chains.

		T 21 S on N. half R 25 E S 1 in NW. R 26 E S 6 in NE S 7 in SE. and S 12 in SW. quadrant, from which: A juniper, 12 in. diam., bears N $71^{\circ}$ E., 250 eka. dist., marked T 21 S R 26 E S 6 BT A cedar, 18 in. diam., bears S. $65\frac{1}{4}^{\circ}$ E., 322 eka. dist., marked T 21 S R 26 E S 7 BT A cedar, 15 in. diam., bears S. $37\frac{1}{2}^{\circ}$ W., 314 eka. dist., marked T 21 S R 25 E S 12 BT A cedar, 13 in. diam., bears N $36\frac{3}{4}^{\circ}$ W., 49 eka. dist., marked T 21 S R 25 E S 1 BT Land mountainous cut by deep canyons putting west, with steep N. & S. slopes. Some sage brush undergrowth. No grass, soil, rocky & sandy, very poor. Sub-soil sandy & rocky. Timber cedar & juniper
--	--	--

North, bet. sec. 1 & 6.

Over mountainous land.

7.50 To North side of mesa & ledges;  
bears NW & SE.

40.00 Descend steep land facing NE.  
475 ft. below top,  
Set an iron post, 3 ft. long, 1 in. in  
dia., 26 in. in the ground for  
 $\frac{1}{4}$  sec. cor. marked on brass  
Cap  $\frac{1}{4}$  S 1 on W. half & S 6 on  
E. half, raise a mound of  
stone, 2 ft. base,  $1\frac{1}{2}$  ft. high W.  
of cor.  
Pits impracticable

chain. East boundary of T 21 S. R 25 E.

September 22. At this cor I set off  
 $0^{\circ} 27' N$  on the decl. arc; and at  
11<sup>h</sup> 53<sup>m</sup> m. l. m. t., observe the  
sun on the meridian the result-  
ing lat. is  $39^{\circ} 01' 49''$ .

111.00 Canyon <sup>and wash</sup>, 125 ft. below 1/4 cor, course  
nw.

Ascend

63.80 Low divide, bears E. + W.

A high pinnacle, bears W., 4 chs.

Descend steep N. slope into Little  
Dolores river.

80.50 Little Dolores river in canyon,  
50 lks. wide, some water, course  
 $77^{\circ} 80' W$ .

Ascend

81.51 Intersect the 4<sup>th</sup> Standard Parallel  
South, 12.06 chs. west of the true  
corner point of T 20 S., R's 25 + 26,  
heretofore described.

Set an iron post, 3 ft. long. 3 in. in  
dia., 24 in. in the ground for  
closing cor. of T 21 S., R's 25 + 26 E.,  
marked on brass caps.

C. T 20 S R 25 E S 36 R 26 E S 31 on N. bay  
C. S 6 R 26 E in SE.

C. S 1 R 25 E in SW

T 21 S on Shaf; raise a  
mound of stone 3 ft. base, 2 ft.  
high, S. of corner.

Pits impracticable

Land mountainous, cut by  
deep canyons cutting west with  
steep north & S. slopes. some  
undergrowth of sage brush. No grass.  
Soil, rocky very poor, sub-soil,  
rocky & gravelly. Bed rock close to surface.  
Timber, very poor cedar & pine.

September 22, 1910  
For general description see book.

East boundary T.21 S.R.25 E.  
chains

"N" of this survey.

Howard Miller  
Instrumentman G.D.O.

Boundaries of T.21 S., R.25 E.

Latitudes, Departures, and Closing Errors.

Lines Designated	True Bearing	Dist.	Latitudes		Departures	
			N.	S.	E.	W.
S.Bdy.	East	477.67	.....	.....	477.67	.....
E.Bdy.	North	481.51	481.51	.....	.....	.....
N.Bdy.secs.1,2,& 3	West	227.94	.....	.....	.....	227.
E. $\frac{1}{2}$ sec.4	West	41.85	.....	.....	.....	41.
W. $\frac{1}{2}$ " "	West	40.03	.....	.....	.....	40.
Sec.5 & E. $\frac{1}{2}$ of 6	S. $89^{\circ}59'W.$	120.18	.....	.03	.....	120.
W. $\frac{1}{2}$ sec.6	N. $89^{\circ}26'W.$	43.04	.43	.....	.....	43.
N.Bdy.6,	West	3.20	.....	.....	.....	3.
W.Bdy.						
Sec.6	South	80.30	.....	80.30	.....	.....
Sec.7 N $\frac{1}{2}$	S. $0^{\circ}06'W.$	40.10	.....	.....	.....	.....
" " S $\frac{1}{2}$	S. $0^{\circ}03'W.$	40.12	.....	80.22	.....	.....
Sec.18						
N $\frac{1}{2}$	S. $0^{\circ}06'W.$	40.40	.....	40.40	.....	.....
S $\frac{1}{2}$	S. $1^{\circ}22'W.$	40.28	.....	40.27	.....	0
Sec.19 &						
N $\frac{1}{2}$ Sec.30	S. $0^{\circ}11'W.$	120.00	.....	120.00	.....	.....
S $\frac{1}{2}$ Sec.30&31	South	120.00	.....	120.00	.....	.....
Convergency						
	T o t a l s		481.94	481.22	477.67	478
	Errors			481.22		477
				.72		

BOOK A 318

FINAL OATHS OF DEPUTY SURVEYOR AND HIS ASSISTANTS.

LIST OF NAMES.

A list of the names of the individuals employed by Howard W. Miller,  
Instrumentman, United States Deputy Surveyor, to assist in running, measuring, and  
marking the lines and corners described in the foregoing field notes of the survey of the  
south and east boundaries of T 21 S R 25 E  
of the S.L.B. & M., Utah,  
showing the respective capacities in which they acted:

Fred Wright, Chainman -  
Karl Rothermund, Chainman -  
Roscoe C. Hallett, Moundman /  
Edward Jones, Moundman.  
Ben Egle, Axman /  
Ben Egle, Axman.  
Ben Egle, Flagman. ✓

FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted

Howard W. Miller, Instrumentman, United States Deputy Surveyor, in surveying all  
those parts or portions of the south and east boundaries  
of T 21 S R 25 E.

Lake Base + meridian, State of Utah, which are represented  
in the foregoing field notes as having been surveyed by him and under his direction; and that said survey  
has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the  
corner monuments established, according to the instructions furnished by the United States Surveyor  
General for Utah  
Fred Wright, Chainman -  
Karl Rothermund, Chainman -  
Roscoe C. Hallett, Moundman /  
Edward Jones, Moundman.  
Ben Egle, Axman /  
Ben Egle, Axman.  
Ben Egle, Flagman. /

Subscribed and sworn to before me this 22  
day of September, 1910 }



Howard W. Miller  
Instrumentman G. L. O.

**FINAL OATH OF UNITED STATES DEPUTY SURVEYOR.**

United States Deputy Surveyor

affirmatively swear that, in pursuance of a contract received from  
United States Surveyor General for \_\_\_\_\_, bearing date \_\_\_\_\_,  
the day of \_\_\_\_\_, 19\_\_\_\_, I have well, faithfully, and truly, in my  
proper person, and in strict conformity with the instructions furnished by the United States Surveyor  
General for \_\_\_\_\_, the Manual of Surveying Instructions, and the laws of  
United States, surveyed all those parts or portions of \_\_\_\_\_.

For final copy of instructions see book #v. T. 25 S., R. 24 E.

of the \_\_\_\_\_

surveys, in the \_\_\_\_\_ of \_\_\_\_\_ which are represented in  
foregoing field notes as having been surveyed by me, and under my direction; and I do further solemnly  
swear that all the corners of said survey have been established and perpetuated in strict accordance with  
the Manual of Surveying Instructions, and the special written instructions of the United States Surveyor  
General for \_\_\_\_\_ and in the specific manner described in the field notes, and that  
the foregoing are the original field notes of such survey.

United States Deputy Surveyor

Subscribed by me, \_\_\_\_\_, and sworn to before me }  
the \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_ }



**APPROVAL.**

**OFFICE OF THE UNITED STATES SURVEYOR GENERAL.**

Salt Lake City, Utah, June 25, 1913.

The foregoing field notes of the survey of the South and East Boundaries of Twp.  
21 South, Range No. 25 East of the Salt Lake Base and Meridian,  
Utah,

submitted by Howard V. Miller, dated August 6, 1910, having been  
affidavited, and the necessary corrections and explanations made, the said field notes, and the  
statements they describe, are hereby approved.

  
Howard V. Miller  
United States Surveyor General

I certify that the foregoing transcript of the field notes of the above-described surveys is  
has been carefully copied from the original notes on file in this office.

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KFB  
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4-679.

BOOK A-378

Filed Mar. 17, 1911

WSH

Book "N"

# FIELD NOTES

OF THE SURVEY OF THE

SUBDIVISION AND MEANNERS

OF

T. 21 S., R. 25 E.

Of the Salt Lake Base and Meridian,

U. t. a. h.

AS SURVEYED BY

Howard W. Miller

Transitman

Assignment Group, United States ~~Department of Surveyor~~

under his Contract No. 4, dated August 6, 1910

Survey commenced

September 30

, 1910

Survey completed

October 27

, 1910

**NAMES AND DUTIES OF ASSISTANTS.**

Fred Wright, ..... Chainman.

Karl Rothermund, ..... Chainman.

Roscoe Hallett, ..... Moundman.

Edward Jones, ..... Axman.

Ben Egle, ..... Flagman.

BOOK A-378

INDEX DIAGRAM.

Township 21 South, Range 25 East

6	79	5	61	4	46	3		2	16	1
78		77		60		45				15
7	76	8	59	0	42	10	29	11	13	12
75		74		57		41		28		12
18	73	17	55	10	39	15	26	14	11	13
72		70		54		38		25		10
19	68	20	52	21	37	22	23	28	8	24
67		66		51		35		21		6
80	65	29	50	28	34	27	20	26	5	25
64		63		49		33		18		11
81	62	82	48	83	31	84	17	85	2	80

Meanders Pages 81 to 89.

PRELIMINARY OATHS OF ASSISTANTS.

WE, Fred Wright and Karl Rotherm  
do solemnly swear that we will well and faithfully execute the duties of chainmen; that we will  
chain upon even and uneven ground, and plumb the tally pins, either by sticking or dropping the  
we will report the true distances to all notable objects, and the true lengths of all lines that  
measuring, to the best of our skill and ability, and in accordance with instructions given us, in the  
the subdivision and meanders of T 21 S.

S.L.B. & M., Utah.

Fred Wright

Karl Rotherm and

Subscribed and sworn to before me this 30  
day of September, 1910



Howard Wm  
Instrumentman

WE, Roscoe Hallett and  
do solemnly swear that we will well and truly perform the duties of moundman in the  
of corners, according to the instructions given us to the best of our skill and ability, in the  
the subdivision and meanders of T 21 S.

S.L.B. & M., Utah.

Roscoe Hallett

Subscribed and sworn to before me this 30  
day of September, 1910



Howard Wm  
Instrumentman

WE, Edward Jones and  
do solemnly swear that we will well and truly perform the duties of axman in the establishment  
and other duties, according to instructions given us to the best of our skill and ability, in the  
the subdivision and meanders of T 21 S.

S.L.B. & M., Utah.

Edward Jones

Subscribed and sworn to before me this 30  
day of September, 1910



Howard Wm  
Instrumentman

I, Ben Egle, do solemnly swear that I will  
perform the duties of flagman according to instructions given me, to the best of my skill and  
survey of the subdivision and meanders of T

S.L.B. & M., Utah.

Ben Egle

Subscribed and sworn to before me this 30  
day of September, 1910



Howard Wm  
Instrument

Subdivisions of T. 21 S., R. 25 E.

Survey commenced September 30, 1910,  
and executed with a W. & L. E.  
Burley solar compass No. 1043.  
For description and test of instru-  
ment see book "A" of this  
survey.

I examine the adjustments of the  
compass and correct the level and  
collimation errors; then, to test the  
solar apparatus, by comparing its  
indications, resulting from solar  
observations made during a.m. +  
p.m. hours, with a meridian  
determined by observations on Polaris,  
I proceed as follows:

At my camp near the center of sec.  
18, T. 21 S., R. 25 E., latitude  $38^{\circ} 59' 5''$  N.,  
longitude  $109^{\circ} 0' 31''$  W.; I set off  
 $38^{\circ} 59' 5''$  N. on the lat. arc;  $2^{\circ} 42'$  S. on  
the decl. arc; and at 4<sup>h</sup> 20. p.m.  
l.m.t., determine with the solar  
a meridian and mark a point  
thereof, on a stone firmly set in  
the ground 5 chs. N. of my  
station.

At 6<sup>h</sup> 57.4 p.m. l.m.t. I observe  
Polaris at eastern elongation, in  
accordance with the Manual  
of Instructions, and mark a  
point in the line thus determined  
on a peg, driven firmly in the  
ground, 5 chs N. of my station

September 30-1910

October 1: At 6<sup>h</sup> 45<sup>m</sup> a.m. l.m.t.  
I lay off the azimuth of Polaris  
 $1^{\circ} 30.6'$  to the west, and mark the  
meridian thus determined, by  
cutting a small groove in the  
stone set September 30; on which

Subdivision of T. 21 S. R. 25 E.

chains

the meridian falls 0.4 ins East of the mark determined by the solar. At 8<sup>h</sup> 20m. a. m. l. m. t. I set off 38° 59' 5" N. on the lat. arc; 2° 59' S. on the decl. arc; and mark a point in the meridian determined with the solar, by a cross on the stone already set, 5 chs. N. of my station; this mark falls 0.4 ins. East of the meridian established by the Polaris observation.

The solar apparatus by J. M. S. a. m. observations, defines positions for meridians, respectively about 8° 21' W. & 0° 21' East of the meridian established by the Polaris observation therefore, I conclude that the adjustments of the instrument are satisfactory.

The magnetic bearing of the true meridian at 8<sup>h</sup> 30<sup>m</sup> a. m., is N. 15° 30' W.; the angle thus determine gives the magnetic declination 15° 30' E.

I commence at the corner of secs. 1, 2, 35 & 36 on the south boundary of the tr. heretofore described,

Hence from

N. 0° 0' W., bet. secs. 35 & 36.

Over gently rolling land, thru scattering forest of cedar & juniper wash, 15 lks. wide, 5 ft. deep, course S. 80° W.

10.30 Wash, at base of ridge, course W. Ascend rocky land sloping S.

35.80 Point for  $\frac{1}{4}$  sec. cor. will fall on S. slope of rock wall where corner cannot be set. Therefore

turn at this point

Subdivision of T. 21 S., R. 25 E.

chains

Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for witness cor. to the  $\frac{1}{4}$  sec. corner marked on brass cap T 21 S R 25 E on N. half S 36 on E. half S 35 on W. half, with WC  $\frac{1}{2}$ ° to the north, raise a mound of stone, 2 ft. base,  $1\frac{1}{2}$  ft. high.

40.00 W. of corner post for sec. 25. top. not set.

Its impracticable

Ascend over ledges

43.00 Top of rock ridge on south side of Coach Creek canyon, bears E. + W. Descend into canyon.

60.50 Coach Creek, in canyon, 10 eks. wide, some water, course W.

Ascend steep land from canyon.

70.00 Top of steep ascent, bears E. + W.

79.00 Ridge, 400 ft. above canyon,

bears E. + W.

Descend.

80.00 Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in the ground and mound of stone for corner of secs. 25, 26, 35 + 36, marked on brass cap

T 21 S S 26 in NW.

R 25 E S 25 in NE.

S 36 in SE. and

S 35 in SW. quadrant.

raise a mound of stone 2 ft. base  $1\frac{1}{2}$  ft. high. W. of corner.

Its impracticable

Trees within limits but too poor to mark.

Land mountainous and gently rolling.

S 37.60 chs. S slope open land.

Undergrowth of sage brush, some good bunch grass, soil, rich.

Subdivision of T. 21 S., R. 25 E.

chains.

sandy loam, sub soil, sandy loam rather moist N 42.40 chas. cut by a deep canyon with westerly drain and very steep N. & S. slopes. Soil, rocky, sub-soil rocky. Timber, very poor cedar & Juniper.

East, on a random line, bet. secs.

25 & 36

4000 Set temporary  $\frac{1}{4}$  sec. cor.

8000 Intersect the east bdy. of the tps. at the cor. of secs. 25, 30, 31 & 36 here-tofore described.

Hence from

West, on true line bet. secs. 25 & 36 over rolling land, along N. side of ridge, thin forest of cedar & pine.

Gradually descend.

4000 Set an iron post, 3 ft long, 1 in. in dia., 26 vis. in the ground for  $\frac{1}{4}$  sec. cor. marked on brass cap  $\frac{1}{4} S 25$  on N. half &  $S 36$  on S. half, from which

A Juniper, 7 vis. diam., bears  $N. 23\frac{1}{4}^{\circ} E.$   
49 lks. dist., marked

$\frac{1}{4} S 25 BT$

A cedar, 6 vis. diam., bears  $S. 28^{\circ} E.$

56 lks. dist., marked

$\frac{1}{4} S 36 BT$

48.00 Leave dense timber

80.00 The corner. of secs. 25, 26, 35 & 36.

Land rolling with a N. slope.  
Soil, gravelly, sub soil, sandy & rocky very poor. Undergrowth some sage brush. No grass.  
Timber, scrub cedar & Juniper.

October 1: At this sec. cor. I set off  $3^{\circ} 03' S.$  on the decl. arc: and

## Subdivision of T. 21 S. R. 25 E.

chain

at 11<sup>h</sup> 50<sup>m</sup>. a.m. l.m.t. observe  
the sun on the meridian, the  
resulting lat. is 38° 57'.4.

N. 0° 0' W bet. secs. 25 & 26.

Over mountainous land thru  
dense forest of cedars & Juniper.  
Descend 25 ft.

1.10 Hollow, diamis N 85° W.

Ascend 60 ft.

Ridge, bears E. & W.

7.50 Road, bears E. & W.

10.00 Base of mesa, bears E. & W.

Ascend over ledges and boulders

24.50 Top of mesa & ridge, 200 ft. above  
base, bears E. & W.

Descend into Star canyon, over  
steep land sloping N. some ledges.

36.50 Wash, and bottom of star  
canyon, 25 eks. wide, coarse W.

Star canyon heads about 60 chs. East

40.00 Set an iron post, 3 ft. long, 1 in. in  
dia., 26 ins. in the ground for  
1/4 sec. cor. marked on brass  
cap 1/4 S 26 on W. half and S 25  
on E. half, raise a mound of  
stone, 2 ft. base, 1 1/2 ft. high, W. of  
corner.

Pits impracticable

Ascend.

46.50 Ridge, bears E. & W.

Ascend 100 ft. over rocky land.

56.50 Hollow, diamis S. 80° W.

Ascend over ledges.

71.10 Ridge, 275 ft. above hollow, bears  
E. & W.

Ascend steep land facing N.

200 ft. below top

Set an iron post, 3 ft. long, 2 in.  
in dia., 24 ins. in the ground and

Subdivision of T. 21 S.R. 25 E.  
chains.

a mound of stone for corner of  
secs. 23, 24, 25 and 26, marked on  
brass cap

T 21 S S 23 in NW.

R 25 E S 24 in NE.

S 25 in SE. and

S 26 in SW. quadrant,  
from which

A juniper, 6 in. diam., bears N.  $61\frac{1}{2}^{\circ}$  E,  
33 lks. dist., marked

T 21 S R 25 E S 24 BT

A juniper, 9 in. diam., bears S  $63\frac{1}{2}^{\circ}$  E  
99 lks. dist., marked

T 21 S R 25 E S 25 BT

A juniper, 7 in. diam., bears S  $15^{\circ}$  W,  
115 lks. dist., marked

T 21 S R 25 E S 26 BT

A juniper, 10 in. diam., bears N.  $70\frac{1}{2}^{\circ}$  W,  
54 lks. dist., marked

T 21 S R 25 E S 23 BT

Land mountainous cut by canyons  
draining west, with steep rocky  
N. & S. slopes. Undergrowth sage  
brush & chapparal. No grass.

Soil rocky & sandy, very poor. Sub-  
soil rocky and clayish.

Timber, scrub cedars & juniper.

October 1 - 1910

October 3: At 8<sup>h</sup>. 20. m. a.m. b.m.t.

I set off  $38^{\circ} 58' N$  on the lat. arc,  
 $3^{\circ} 46' S$  on the decl. arc and  
determine a meridian with the  
solar at the cor. of secs. 23, 24, 25  
& 26.

Hence true

East on a random line bet.

secs 24 & 25

Set temporary  $\frac{1}{4}$  sec. cor.

Intersect the east boundary of the

40.00

80.02

Subdivision of T. 21 S., R 25 E.

Chains.

- Up. 5 lks. S. of the cor. of secs.  
 19, 24, 25 & 30 heretofore described  
 Hence from:  
 $S. 89^{\circ} 58' W$ , on tree line bet. secs.  
 24 & 25
- Over mountainous land thru  
 forest of cedar & pines.  
 Descend into canyon 175 ft.
- 5.40 Wash in canyon, 20 lks. wide,  
 course  $N. 30^{\circ} W$ .  
 Ascend.
- 25.00 Ridge, 200 ft. above canyon, bears  
 $N. 45^{\circ} S$ .  
 Descend towards fork of star  
 canyon over land facing W.  
 Set an iron post, 3 ft. long, 1 in. in  
 dia., 26 ms. in the ground for  
 $\frac{1}{4}$  sec. cor. marked on brass  
 cap  $\frac{1}{4} S 24$  on N. half and  $S 25$   
 on S. half, from which  
 A pines 8 ms. diam., bears  $N 14^{\circ} E$ .  
 15 lks. dist., marked  
 $\frac{1}{4} S 24 BT$   
 A pines, 16 ms. diam., bears south  
 36 lks. dist., marked  
 $\frac{1}{4} S 25 BT$
- 43.00 Wash in canyon, 10 lks. wide, 125  
 ft. below ridge, course NW.  
 Ascend steep land sloping NE.  
 Ridge, bears NW. & SE.
- 52.00 Descend 150 ft.
- 62.20 Wash, 25 lks. wide, course NW.  
 Hence over land facing nearly  
 north
- 80.02 The cor. of secs. 23, 24, 25 & 26  
 land, mountainous, cut by  
 deep canyons draining NW. with  
 steep rocky NE & W. slopes.  
 Some undergrowth of chaparral.  
 No grass. Soil - rocky 4<sup>th</sup> rate, sub-

Subdivision of T. 21 S., R. 25 E.

Chain.

soil, rocky & sandy. Timber, scrub  
Cedar & Pinon

7.0° W., bet. secs. 23 & 24.

Over mountainous land thru  
forest of Cedar & Pinon.

1.25 Wash, 25 lks. wide, course SW.  
Ascend.

11.50 Base of mesa & ledges, 275 ft. high  
up which I cannot chain. To deter-  
mine the distance I set a flag  
on line on top of ledges, then  
measure a base  $77^{\circ} 89' 59'' E.$  5.50  
chs. to a point, from which flag  
beats  $77^{\circ} 35' 33'' W.$  From the flag  
the east end of my base beats  $735' 33'' E.$   
Therefore tang  $54' 28'' \times$  base or  $1.40$   
 $\times 5.50$  chs. = 7.70 chs. which, added  
to 4.50 chs. makes

12.20 To top of mesa & ledge, beats.  
 $77^{\circ} 80' E.$  &  $880' W.$

Hence across mesa.

29.50 N. side of mesa, beats E. & W.  
October 3: At this station I set  
off  $3' 49''$ . Set the decl. arc: and  
at  $11^{\text{th}} 49.5^{\text{m}}$  a.m. l. m. t. observe  
the sun on the meridian the  
resulting lat. is  $38^{\circ} 58'$ .

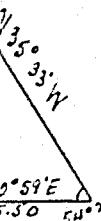
Began descent over steep N. side  
of mesa into Fork of Star Canyon.

14.00 200 ft. below top

Set an iron post, 3 ft. long, 1 in. in  
dia., 26 ins. in the ground for  
 $\frac{1}{4}$  sec. cor. marked on brass cap  
 $\frac{1}{4} S 23$  on W. half &  $S 24$  on E. half.  
raise a mound of stone 2 ft. base  
 $1\frac{1}{2}$  ft. high W. of cor.

Pits impracticable.

Trees within limits but all too poor  
to mark.



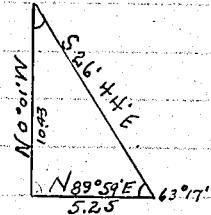
## Subdivision of T. 21 S., R. 25 E.

chain

46.20

Wash in Fork of Star canyon, 25  
lks. wide, 425 ft. below top, course  
west.

The line running N. is inaccessible.  
passing over series of ledges and  
one high wall of mesa. To det-  
erminate the distance to the top  
of mesa I set a flag on line on  
top then measure a base  $N 89^{\circ} 59' E$   
 $5.25$  chs. to a point, from  
which flag bears  $N 26^{\circ} 44' W$ . From  
the flag the east end of the base  
bears  $S 26^{\circ} 44' E$ , therefore tang  $63^{\circ}$   
 $17' \times$  base or  $19.868 \times 5.25$  chs =  $104.3$  chs  
which added to 46.20 chs. makes  
To top of mesa, 325 ft. above canyon,  
bears  $E. + W.$



56.63

80.00

Hence over mesa top  
Set an iron post, 3 ft. long, 2 ins. in  
dia., 24 ins. in the ground and  
mound of stone for cor of secs  
13, 14, 23 & 24, marked on brass  
cap

T 21 S S 14 in NW,

R 25 E S 13 in NE,

S 24 in SE. and

S 23 in SW. quadrant  
from whichA juniper, 8 ins. diam., bears  $N. 81^{\circ} E.$ ,

27 lks. dist., marked

T 21 S R 25 E S 13 BT

A cedar, 13 ins. diam., bears  $S. 11\frac{1}{2}^{\circ} E.$ 

16 lks. distant, marked

T 21 S R 25 E S 24 BT

A juniper, 15 ins. diam. bears  $S 8\frac{1}{2}^{\circ} W.$ 

16 lks. dist., marked

T 21 S R 25 E S 23 BT

A juniper 12 ins. diam., bears  $N. 63^{\circ} W.$ 

80 lks. dist., marked

T 21 S R 25 E S 14 BT

chains

Subdivision of T 21 S., R 25 E.

Land mountainous, cut by a deep canyon draining west, steep N. & S. slopes. Undergrowth sage & chapparal, some grass on mesas. Soil, rocky, 4<sup>th</sup> rate, sub-soil, rocky. Timber, cedar & juniper.

October 3 - 1910

October 14: For solar observation see line bet. secs. 14 & 23.

The corner of secs. 13, 18, 19 & 24 on the east bdy. of the tp. being plainly visible, run for said cor.

East, on a random line bet. secs. 13 & 24

40.00 Set temporary  $\frac{1}{4}$  cor.

Oct. 14: At this cor. I set off  $8^{\circ} 01' S.$  on the decl. arc. and at  $11^{\text{h}} 46^{\text{m}}$  a.m. l. m. t. observe the sun on the meridian; the resulting lat. is  $38^{\circ} 59'$ .

80.05 Intersect the east boundary of the tp. at the cor. of secs. 13, 18, 19 & 24 heretofore described.

Hence run

West, on true line, bet. secs. 13 & 24

Over mountainous land thru forest of cedar & juniper.

7.80 Wash in canyon, course  $71.80^{\circ} W.$

Hence along S. side of canyon

38.25 Wash in canyon from the south, 25 lks. wide, course N. Ascend

40.02 Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for  $\frac{1}{4}$  sec. cor. marked on brass cap  $\frac{1}{4}$  S 13 on N. half & S 24 on S half,

raise a mound of stone 2 ft.

base  $1\frac{1}{2}$  ft. high.  $\frac{1}{2}$  of corner Pts. imprakab.

56.00 Ridge 32.5 ft. above canyon, bears NW. & SE.

Hence over broken mesa top.

Subdivision of T. 21 S. R. 25 E.

chains

	Descend.
64.40	Hollow, drains N.
	Ascend
67.25	Low ridge, bears N. + S.
	Descend
72.00	Hollow drains $71^{\circ}35'W$ .
	Ascend
80.05	The cor. of secs 13, 14, 23 + 24 land, mountainous cut by canyons draining N. + west steep N. + E. slopes. Soil, rocky + sandy sub-soil, rocky. No grass. Timber, cedar + juniper.
	$N.0^{\circ}01'W$ , bet. secs 13 + 14 Over mountainous land facing N.
	Descend thru cedar + juniper.
22.30	Hollow, 100 ft below, sec. cor. course W Asc. 75 ft
32.00	Ridge, bears E. + W.
40.00	Set an iron post, 3 ft long, 1 in. in dia., 26 vis. in the ground for $\frac{1}{4}$ sec. cor. marked low brass cap $\frac{1}{4}S\ 14$ on W. half, and $S\ 13$ on E. half, from which A juniper, 8 vis. diam., bears $S.24\frac{1}{2}'E$ . 204 lks dist. marked $\frac{1}{4}S\ 13\ BT$ .
	A juniper, 10 vis. diam., bears $71^{\circ}37\frac{1}{4}'W$ . 208 lks dist. marked $\frac{1}{4}S\ 14\ BT$
72.30	Wash, 15 lks wide, coarse NW.
	Ascend
77.00	Ridge, bears NW. + SE.
	Gradually descend.
82.00	N edge of mesa bears NW. + SE.
	Descend precipitous N. slope over ledges + boulders 450 ft to.
80.00	Set an iron post, 3 ft. long, 2 vis. in.

Subdivision of T 21 S., R 25 E.

chains

dia. 24 ms in the ground for cor  
of secs 11, 12, 13 & 14 marked on  
brass cap

T 21 S S 11 in NW,

R 25 E S 12 in NE,

S 13 in SE and

S 14 in SW, quadrant,

from which

A cedar, 10 ms diam., bears N. 62 $^{1/4}$  E.  
67 lks. dist., marked

T 21 S R 25 E S 12 BT

A pinon 10 ms diam., bears S. 40 $^{3/4}$  E.  
54 lks. dist., marked

T 21 S R 25 E S 13 BT

A pinon, 16 ms diam., bears S 48 $^{3/4}$  W.  
118 lks. dist., marked

T 21 S R 25 E S 14 BT

A cedar, 14 ms diam., bears N. 46 $^{1/4}$  W.  
84 lks. dist., marked

T 21 S R 25 E S 11 BT.

Land mountainous.

S 62 chs. western drain cut by  
ravines with N + S slopes of ridges  
N 18 chs. NW slope of mesa under-  
growth sage brush some grass  
Soil, rocky + decayed vegetation, very  
poor sub soil, sandy gravelly  
Timber, cedar + pinon.

October 14, 1910

October 17: At 8<sup>h</sup> 16<sup>m</sup> a.m. I mt  
I set off 38° 59' N. on the lat arc;  
9° 03' S. on the decl. arc; and  
determine a meridian with the  
solar at the cor. of secs. 11, 12, 13 &  
14.

Thence I run

East on a random line bet. secs. 12 & 13  
10.00 Set temporary 1/4 cor.  
60.00 Base of impassable ledges + cliffs

Subdivision of T 21 S. R. 25 E.

chain.

	<p>to pass which I offset as follows:</p> <p>South, 8.00 chs.; then, on offset line East, 20.00 chs; then North 8.00 chs. to random line, on which, at</p>
80.07	<p>intersect East boundary of the tp at the true corner point of secs. 7, 12, 13 &amp; 18 heretofore described. Hence run West, on tree line bet. secs. 12 &amp; 13. Over mountainous land. Edge of impassable cliffs. to pass which I offset as follows. South 8.00 chs, then run on offset line West</p>
20.07	<p>offset N. 8.00 chs. to true line. descend over land sloping SW.</p>
39.30	<p>Marble canyon, and wash, 50 lks. wide, course N. 60° W. Ascend.</p>
40.03 $\frac{1}{2}$	<p>Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for <math>\frac{1}{4}</math> sec. cor. marked on brass cap <math>\frac{1}{4} S 12</math> on N. half &amp; <math>S 13</math> on S. half, raise a mound of stone, 2 ft. base, <math>1\frac{1}{2}</math> ft. high. N. of corner. Pits impracticable</p>
80.07	<p>The cor. of secs. 11, 12, 13 &amp; 14. Land mountainous draining NW, with SW. &amp; NE. slopes. No undergrowth. No grass. Soil, rocky &amp; sandy, sub-soil, rocky &amp; sandy. Juniper, cedar &amp; pinon</p>
	<p>N. 0° 0' W., bet. secs. 11 &amp; 12. Over mountainous land thru forest of cedar &amp; pinon Descend towards Marble Canyon. Wash &amp; Marble Canyon, 50 lks. wide.</p>
10.50	

chains

Subdivisions of T. 20 S., R. 25 E.

- 100 ft. below sec. cor. course NW.  
Ascend towards mesa.
- 20.90 Base of impassable cliffs and  
West edge of mesa  
To pass cliffs I offset as follows  
West 8.10 chs  
 $N^{\circ} 01' W$  19.10 chs  
East 8.10 chs. to a point on edge  
of cliffs
- 40.00 Set an iron post, 3 ft. long, 1 in. in dia,  
26 in. in a mound of earth & stone  
for  $\frac{1}{4}$  sec. cor. marked on brass  
cap  $T 21 S 11$  on W. half &  $S 12$  on E half  
raise a mound of stone 2 ft. base,  
 $1\frac{1}{2}$  ft. high W. of cor. Posts impracticable  
from my offset point 8.10 chs. W. of  
the  $\frac{1}{4}$  cor. I continue on offset line  
 $N^{\circ} 01' W$ : 31 chs.  
East 8.10 chs. to a point on  
line bet. secs. 11 & 12
- 71.00 North side of cliffs & mesa.  
A low divide bears W. 8 chs.  
Descend over land facing N.
- 75.35 Wash, in canyon, course NW.  
Ascend:
- 80.00 Set an iron post, 3 ft. long, 2 in. in  
dia, 24 in. in the ground for  
cor. of secs. 11 & 12, marked  
on brass cap  
 $T 21 S 2$  in NW,  
 $R 25 E S 1$  in NE,  
 $S 12$  in SE and  
 $S 11$  in SW quadrant.  
raise a mound of stone, 2 ft.  
base,  $1\frac{1}{2}$  ft. high W. of corner.  
Posts impracticable  
land mountainous with waterless  
drain. No undergrowth, no grass.  
Soil, rocks. Subsoil rocky. Timber  
Cedar & Juniper.

chain Subdivisions of T 21 S., R 25 E.

October 17: At this sec. cor. I set off  
 $9^{\circ} 07' S.$  on the decl. arc: and at  
 $11^{\text{h}} 46^{\text{m}}$  a.m. l.m.t. observe the  
 sun on the meridian the resulting  
 lat. is  $39^{\circ} 01'$

East, on a random line, bet.  
 secs. 1 + 12.

40.00 Set temporary  $\frac{1}{4}$  cor.

80.15 Intersect the East bdy. of the tp  
 16 lks. N. of the cor. of secs. 1, 6, 7 + 12  
 heretofore described.

Hence draw

$N 89^{\circ} 53' W.$ , on true line bet. secs.  
 1 + 12.

Over mountainous land thru  
 forest of cedar & pinyon.

15.00 West. edge of mesa bears  $77.80^{\circ} W.$  +  
 SE.

Descend abruptly over ledges.

30.15 Base of descent 350 ft. below top  
 bears NW - SE.

40.07  $\frac{1}{4}$  Set an iron post, 3 ft. long, 1 in. in  
 dia., 26 ins. in the ground for  
 $\frac{1}{4}$  sec. cor. marked on brass  
 Cap  $\frac{1}{4} S 1$  on N. half and  
 $S 12$  on S half, from which  
 a pionon, 7 ins. diam., bears S.  $72 \frac{1}{2}^{\circ} E.$   
 119 lks. dist. marked  
 $\frac{1}{4} S 12 BT$

A pionon 17 ins. diam., bears  $77.17^{\circ} W.$   
 184 lks. dist. marked

$\frac{1}{4} S 1 BT$ .

43.10 Wash, in canyon, 50 lks. wide,  
 course  $N. 60^{\circ} W.$

Hence over land sloping NE.

Spur from mesa projects NW.

The cor. of secs. 1, 2, 11 + 12.

Land mountainous, westerly  
 drawn, steep W. + NE. slopes.

chains.

Subdivision of T. 21 S., R 25 E.

Undergrowth sage brush, no grass. Soil, rocky, sub soil, sandy & rocky. Timber cedar & pinon.

October, 17, 1910

October 18: 1910

Knowing that closing corners are necessary on the N. bdy of the tp. I run

N. 0° 01' W.; bet. secs. 1 & 2

Over mountainous land thru forest of cedar & pinon  
Descend towards canyon.

8.75 Canyon, 150 ft. below corner, course NW.

Ascend towards pinnacles.

20.00 Base of pinnacles, bears E & W.  
to pass which I offset as follows  
West 8.00 chs.

N. 0° 01' W., 20 chs:

East 8.00 chs. to line bet. secs 1 & 2  
and point for the  $\frac{1}{4}$  sec. cor.

40.00 Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for the  $\frac{1}{4}$  sec. cor. mkd. on brass cap  
 $\frac{1}{4}$  S 2 on W. half & S 1 on E half,  
raise a mound of stone 2 ft. base  
 $1\frac{1}{2}$  ft. high W. of corner.

Pits impracticable

41.50 Begin descent towards Little Dolores river.

68.20 Little Dolores river in canyon, 50 ft. wide, some water, 225 ft. below  
 $\frac{1}{4}$  cor. course W.

Hence ascend towards mesa

75.60 Base of mesa. Bears N 80° E & S 80° W  
81.35 Intersect N. bdy. of the tp. 5.09 chs  
West. of the witness corner to secs  
35 & 36, heretofore described  
Point for closing corner falls on

## Subdivision of T. 21. S., R. 25 E.

chain

sandstone ledge where corner cannot be set.

- 75.60 Set an iron post, 3 ft long, 2 in. in dia., 24 in. in the ground for witness corner to closing corner of secs. 1 + 2 mkd thus on brass cap, top of sage representing north

T 20 S R 25 E

S 35 S 36

WCC

S 2 | S 1

raise a mound of stone, 2 ft. base, 1½ ft. high, S. of corner.

Pits impracticable

Land mountainous cut by canyons, draining West. Under-growth, some sage brush, no grass, soil, rocky, sub-soil rocky very poor

Timber, cedar & piñon

October, 18, 1910

October 4: At 8<sup>h</sup> 19<sup>m</sup> a.m. l.m.  
I set off  $38^{\circ} 56' N.$  on the lat. arc:  
 $40^{\circ} 09' S.$  on the decl. arc; and determine a meridian with the solar at the corner of secs. 2, 3, 34 + 35 on the S. bdy of the tp. heretofore described.

Hence true

$N. 0^{\circ} 01' W.$ , bet. secs. 34 + 35

Over mountainous land,  
thru forest of cedar & piñon.

1.00 S. side of canyon, bears E. & W.  
desc. 100 ft

6.00 Base of canyon & wash, course W  
ascend.

8.80 N. side of canyon, bears N.E. & W.  
descend.

Subdivision of T. 21 S., R 25 E.

chains

4.000	Set an iron post, 3 ft. long, 1 in dia., 26 ins. in the ground for $\frac{1}{4}$ sec. cor. marked on brass cap $\frac{1}{4}$ S 34 on W. half & S 35 on E. half, raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high W. of corner Pits impracticable
64.50	Lop of canyon over Coach Creek, brass E + SW. Descend abruptly over ledges.
76.10	Coach Creek in canyon, 25 lks. wide, some water, 300 ft. below top, course W. for 5 chs. thence SW. Ascend 100 ft.
80.00	Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in the ground and mound of stone for cor. of secs 26, 27, 34 & 35, marked on brass caps
	T 21 S S 27 in NW, R 25 E S 26 in NE., S 35 in SE and S 34 in SW quadrant. raise a mound of stone, 2 ft. base $1\frac{1}{2}$ ft. high W. of corner. Land mountainous draining west. Undergrowth sage brush, some grass. Soil, rocky & decayed vegetation very poor, sub. soil, rocky & sandy. Timber, cedar & juniper.

4.00	East, on random line bet. secs. 26 & 35 Set temporary $\frac{1}{4}$ cor.
8.00	Intersect N. & S. line 3 lks. N. of the cor. of secs. 25, 26, 35 & 36.  Hence true N $89^{\circ} 59'$ W., on true line bet. secs. 26 & 35 Over mountainous land, thru

Subdivision of T. 21 S., R. 25 E.

chains.

- scattering cedar & pinon.  
 14.25 Ridge, bears East & NW.  
 descended into coach creek canyon  
 over rocky land sloping SW.  
 29.70 Wash, course SW.  
 33.75 Coach creek, 10 lks. wide, some  
 water, 400 ft. below top, course N $80^{\circ}$ W.  
 37.75 Coach creek, 25 lks. wide, course S.80 $^{\circ}$ W.  
 39.50 " " " " S85 $^{\circ}$ W.  
 40.03 Point for  $\frac{1}{4}$  sec. cor. in creek.  
 40.75 Set an iron post, 3 ft. long, 1 in. in  
 dia., 26 ins. in the ground for  
 witness cor. to the  $\frac{1}{4}$  sec. cor.  
 marked on brass cap T21S R25  
 E 526 on N. half, S 35 on S  
 half with W C  $\frac{1}{4}$  A to the east,  
 from which  
     A cedar, 5 ins. diam. bears, N. 30 $^{\circ}$  E.  
     26 lks. dist. marked  
         W C  $\frac{1}{4}$  S 26 B.T  
     A pinon, 12 ins diam, bears S. 21 $\frac{1}{4}$  W.  
     26 lks. dist. marked  
         W C  $\frac{1}{4}$  S 35 B.T  
 October 14: At this corner I set  
 off 4° 13' S on the decl. arc, and  
 at 11° 49' m a.m. l.m.t. observe  
 the sun on the meridian; the  
 resulting lat. is 38° 57'.  
 43.00 Coach creek, 25 lks. wide, course NW.  
 50.00 Spur, projects N.  
 51.00 Ledge over creek, 75 ft. high  
 51.30 Recross coach creek, course S.80 $^{\circ}$ W.  
 Hence over rocky land sloping  
 S.  
 80.06 The cor. of secs. 26, 27, 34 & 35  
 land, mountainous, drawing  
 West. Undergrowth sage brush  
 & some willow, no grass. Soil,  
 rocky, sub soil, rocky, very poor.  
 Timber, scattering cedar & pinon

Subdivision of T. 21 S., R 25 E.

chains

- |       |   |
|-------|---|
|       | 71.0°0'W, bot. secs 26 + 27<br>over mountainous land thru<br>scattering cedar + Juniper. Ascend<br>top of Coach Creek Canyon's ridge,<br>250 ft. above base, bears E. + S. 60°W.<br>Gradually ascend.   |
| 8.00  | Ridge, bears E. + W.  |
| 15.60 | Base of mesa, + ledges, bears<br>E + W. The point for cor. will<br>fall on ledges where it cannot<br>be set, therefore at this point<br>Set an iron post. 3 ft. long, 1 in. in<br>dia., 26 ins. in the ground for<br>witness corner to the $\frac{1}{4}$ sec. cor.<br>marked on brass cap T 21 S R 25<br>E on N. half, S 26 on E. half<br>S 27 on W. half, with WC $\frac{1}{4} \times$<br>to the north, raise a mound of<br>stone, 2 ft. base, $1\frac{1}{2}$ ft. high,<br>W. of corner. |
| 40.00 | Pts impracticable to set.<br>To determine the distance up<br>mesa I set a flag on line on<br>top of ledges, then measure a<br>base $77^{\circ} 89' 59'' E.$ , to a point,<br>from which, flag bears $N 22^{\circ} 49' W.$<br>From the flag the east end of the<br>base bears $S 22^{\circ} 49' E.$ , therefore tang<br>$67^{\circ} 12' \times$ base or $2.378 \times 5.00 = 11.89$<br>which added to 34.20 chs<br>makes   |
| 46.09 | Top of rock wall, bears W +<br>$N 80^{\circ} E.$<br>Continue to asc.  |
| 51.50 | Ridge, 875 ft. above coach creek,<br>bears W + $N 85^{\circ} E.$<br>Descend over ledges into star<br>canyon.  |
| 65.80 | Bottom of Star canyon + wash,<br>50 lks. wide, course west.   |

$N 22^{\circ} 49' W$

$N 89^{\circ} 59' E$

$5.00$

$67^{\circ} 12'$

Subdivision of T. 21 S. R. 25 E.

chains

	Ascend precipitous land facing S over ledges & boulders
73.00	Top of mesa & canyon wall 225 ft. above base, bears E. + W. Hence across mesa
8000	Set an iron post, 3 ft. long, 2 in. in dia., 2 ft. in the ground for cor. of secs. 22, 23, 26 & 27 mkd on brass cap
	T 21 S S 22 in NW, R 25 E S 23 in NE, S 26 in SE and S 27 in SW quadrant, from which
	A pinon, 10 in. diam., bears N. $51\frac{1}{2}$ ° E., 161 lks. dist., marked
	T 21 S R 25 E S 23 BT
	A pinon, 18 in. diam., bears S. $83^{\circ}$ E., 78 lks. dist., marked
	T 21 S R 25 E S 26 BT
	A pinon, 10 in. diam. bears S. $42\frac{1}{2}$ ° W., 281 lks. dist., marked
	T 21 S R 25 E S 27 BT
	A pinon, 8 in. diam., bears N. $48\frac{1}{2}$ ° W., 65 lks. dist., marked
	T 21 S R 25 E S 22 BT
	Land, mountainous drawing West, steep N. + S. slopes of ridges Some undergrowth of sage. No grass. Soil, rocky & sandy, poor. sub soil, rocky.
	Timber cedar & pinon.

October 14, 1910

October 10: 1910

S  $89^{\circ} 59'$  E. on a random line bet.  
secs. 23 & 26

27.30 Edge of ledges bears East & S  $80^{\circ} W$ .  
To pass which I offset as follows:  
North 1.85 chs, then, on offset

Subdivision of T. 21 S., R. 25 E.

chains

- line  
 S  $89^{\circ} 59' E$ , 10 chs.; then  
 South 1.85 chs. to the random  
 line.
- 40.00 Set temporary  $\frac{1}{4}$  cor.  
 Intersect N. & S. line 16 lks. S. of the  
 cor. of secs. 23, 24, 25 + 26,
- Hence from  
 S  $89^{\circ} 54' W$ , on true line bet. secs.  
 23 + 26.  
 Over mountainous land, thru  
 forest of cedar + juniper.  
 Descend
- 2.00 Hollow, 25 lks. wide, dia. SW.  
 Hence ascend over SE. slope of  
 mesa.
- 36.80 Top of mesa, 275 ft. above  
 hollow, bears NE. +  $S 80^{\circ} W$ .
- 40.02 Set an iron post, 3 ft. long, 1 in. in  
 dia., 26 ins. in the ground +  
 mound of stone for  $\frac{1}{4}$  sec. cor  
 marked on brass cap  $\frac{1}{4} S 23$  on  
 N. half +  $S 26$  on S. half., from  
 which  
 A juniper, 11 ins. diam., bears  $N. 6^{\circ} E$ ,  
 49 lks. dist., marked  
 $\frac{1}{4} S 23 BT$
- A juniper 8 ins. diam., bears  $S 36 \frac{1}{4} E$ .  
 118 lks. dist., marked  
 $\frac{1}{4} S 26 BT$ .
- 42.74 To margin of impassable ledges.  
 Offset North 1.85 chs.; then run on  
 offset line  $S. 89^{\circ} 54' W$ .
- 52.74 Offset South 1.85 chs. to true line  
 Gradually descend
- 8004 The corner of secs. 22, 23, 26 + 27  
 Land, mountainous  
 E 36.80 chs. SE. slope mesa.  
 W 43.24 chs. W. slope of mesa

Subdivisions of T. 21 S., R. 25 E.

chain.

Undergrowth-chapparal, some grass.  
Soil, rocky & sandy, sub soil,  
rocky & sandy, bed rock close to  
surface.

Juniper cedar & Juniper.

October 10: At this sec. cor. I set off  
 $6^{\circ} 31' S.$  on the decl. arc and at  
 $11^{\text{th}} 47 \text{ m. a.m.l.m.t.}$  observe the  
sun on the meridian; the resulting  
lat is.  $38^{\circ} 58' \frac{1}{2}$

N.  $0^{\circ} 01' W.$ , bet secos. 22 & 23.

Over mountainous land, thru  
forest of cedar & Juniper.

5.25 N. side of mesa, bears E. & W.  
descend over ledges.

15.95 Ledge, 50 ft. high, bears NW. & SE.

24.75 Canyon & wash, 500 ft. below top,  
course NW.

Ascend 400 ft.

Rocky ridge, East & West.  
descend.

39.00 Ledge, 50 ft. high, bears E. & W.

40.00 Set an iron post, 3 ft long, 1 in. in  
dia., 26 ins. in the ground for  
 $\frac{1}{4}$  sec. cor. marked on brass cap  
 $\frac{1}{4} S 22$  on W. half and  $S 23$  on  
E. half, from which

A Juniper, 12 ins diam, bears East  
29 eks. dist., marked  
 $\frac{1}{4} S 23$  BT

A Juniper 8 ins. diam, bears  $S 89\frac{1}{2}^{\circ} W.$ ,  
27 eks. dist., marked  
 $\frac{1}{4} S 22$  BT

46.80 Fork of Star Canyon & wash,  
25 eks. wide, 280 ft. below ridge  
course West.

Base of impassable rock wall,  
up which I cannot climb, to  
determine the dist., I make a flag

Subdivision of T. 21 S., R. 25 E.

chains.

X<sup>28°</sup>  
36' N  
89°59'E  
10:10  
61°25'

- on line on top, then measure a base  $77.89^{\circ}59'E.$ , 10:10 chs. to a point, from which flag bears  $728^{\circ}36'W$ , from the flag the east end of the base bears  $S28^{\circ}36'E$ . therefore tang  $61^{\circ}25' \times$  base or  $1.835 \times 10:10 = 18.54$  chs. which added to 46.80 chs. makes.
- 65.34 To top of rock wall + mesa, 350 ft. above canyon, bears SW. + East. Hence across narrow mesa.
- 67.00 Mesa bears  $N10^{\circ}E$  & SW.
- 72.70 mesa bears West & SE.
- 80.00 Set aviation post, 3 ft. long, 2 in. in dia., 24 ins. in the ground for cor of secs. 14, 15, 22 & 23, marked on brass cap
- $T\ 21\ S\ S\ 15$  in NW,  
 $R\ 25\ E\ S\ 14$  in NE,  
 $S\ 23$  in SE and  
 $S\ 22$  in SW quadrant from which
- A cedar, 16 ins. diam., bears  $S.6\frac{1}{4}^{\circ}W$ .  
271 lks. dist. marked.
- $T\ 21\ S\ R\ 25\ E\ S\ 22\ BT$ .
- A juniper, 22 ins. diam., bears  $77.74^{\circ}W$ , 224 lks. dist. marked
- $T\ 21\ S\ R\ 25\ E\ S\ 15\ BT$ .
- No trees in secs. 14 + 23.
- Raise a mound of stone, 2 ft. base,  $1\frac{1}{2}$  ft. high, W. of corner.  
Its impracticable
- Land mountainous, draining west, with steep N. & S. slopes.  
Undergrowth, sage brush, no grass.  
Soil, rocky very poor, sub soil sandy & rocky.
- Lumber, cedar & Juniper

October 10, 1910

Subdivision of T. 21 S., R. 25 E.

chains	
	October 14: At 8 <sup>h</sup> . 16 <sup>m</sup> . a.m. l.m.t., I set off $38^{\circ} 59'$ on the lat. arc; $7^{\circ} 57' S.$ , on the decl. arc; and determine a meridian with the solar at the cor. of secs. 14, 15, 22 and 23. Hence I run. $N. 89^{\circ} 54' E.$ , on random line bet. secs. 14 and 23. Set temporary $\frac{1}{4}$ sec. cor. Intersect N. & S. line 5 lks. north of the cor. of secs. 13, 14, 23 and 24.
11.00	Hence I run $S. 89^{\circ} 56' W.$ , on tree line bet. secs. 14 and 23. Over mountainous land. Gradually descend through forest of cedar and piñon.
80.08	E. side of canyon bears N.W. & S.E. Descend 100 ft.
18.70	Wash in canyon, course N.W. Ascend
24.50	West side of canyon, 200 ft. above base, bears $77.80^{\circ} W. & S.E.$ .
40.05	Set an iron post, 3 ft. long, 1 m. in dia., 26 ins. in the ground for $\frac{1}{4}$ sec. cor., marked on brass cap $\frac{1}{4} S. 14$ on N. half and $S. 23$ on S. half, from which A piñon, 12 ins. diam., bears $N. 115^{\circ} E$ 104 lks. dist., marked $\frac{1}{4} S. 14 BT.$
	A piñon, 10 ins. diam., bears $S. 80^{\circ} W.$ , 123 lks. dist., marked $\frac{1}{4} S. 23 BT.$
80.08	The cor. of secs. 14, 15, 22 & 23. Mountainous land with a westerly drain. Undergrowth sage brush, some grass. Soil, sandy

Subdivision of T. 21 S.R. 25 E.

Champs.

loam and rocky, sub soil sandy and rocky, bed rock within 3 ft. of surface.

Timber, cedar and piñon.

October 14, 1910

Oct 11: 1910

N.  $0^{\circ} 0' W.$ , bet. secs. 14 and 15  
Over mountainous land through forest of cedar and piñon.  
Descend.

5.00 South side of canyon, bears E. & W.  
Descend abruptly.

11.00 Bottom of canyon and wash,  
125 ft. deep, coarse W.  
Ascend

21.20 Top of canyon, bears E. & W.  
Continue to ascend.

29.40 Ridge; bears E. and W.  
Gradually descend.

40.00 Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for  $\frac{1}{2}$  sec. cor., marked on brass cap  $\frac{1}{2}$  S 15 on W. half and S 15 on E. half, raise a mound of stone 2 ft. base,  $\frac{1}{4}$  ft. high W. of cor.

Pits impracticable

October 11, 1910

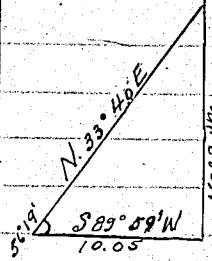
October 15: At  $8^h 16^m$  a.m. l.m.t., I set off  $38^{\circ} 59'$  on the lat. arc;  $8^{\circ} 19' S.$  on the decl. arc; and determine a meridian with the solar at the  $\frac{1}{2}$  sec. cor. lat. secos. 14 and 15. Hence I run N.  $0^{\circ} 0' W.$

55.00 To south side of canyon and high ledges, across which I cannot chain, to determine the distance.

Sub-division of T. 21 S., R. 25 E.

chains

across, I set a flag on line on N. side, then, measure a base  $S.89^{\circ}59'W$ , 10.05 chs to a point from which the flag bears  $N.33^{\circ}40'E$ . From the flag the West end of the base bears  $S.33^{\circ}40'W$ , therefore tang  $56^{\circ}19' \times \text{base or } 1.50 \times 10.05 = 15.07 \text{ chs}$ . which, added to 55.00 chs. makes.



70.07 To north side of canyon bears SE. + W.

Ascend.

76.70 Ridge, bears E. + W.

80.00 Set saw iron post, 3 ft. long, 2 in. in dia., 24 in. in the ground and mound of stone for cor. of secs 10, 11, 14 + 15, marked on brass cap

T 21 S S 10 in NW.,

R 25 E S 11 in NE.,

S 14 in SE. and

S 15 in SW. quadrant,

from which

A pinyon, 18 in. diam., bears  $N.58^{\circ}E$ .

223 lks. dist., marked

T 21 S R 25 E S 11 BT

A pinyon, 12 in. diam., bears  $S.20\frac{1}{2}^{\circ}E$ .

129 lks. dist., marked

T 21 S R 25 E S 14 BT

A pinyon 14 in. diam., bears  $S.66\frac{1}{2}^{\circ}W$ ,

200 lks. dist. marked

T 21 S R 25 E S 15 BT

A pinyon 10 in. diam., bears  $N.60\frac{1}{2}^{\circ}W$ ,

303 lks. dist. marked

T 21 S R 25 E S 10 BT

Land, mountainous, draining west. Undergrowth, sage brush, some grass, soil, sandy + rocky, very poor sub-soil, sandy, bed rock close to surface. Juniper cedar + pinyon.

Subdivision of T. 21 S., R. 25 E.

chain.

- 'N.  $89^{\circ} 56' E.$ , on a random line bet  
secs. 11 + 14
- 4.000 Set temporary  $\frac{1}{4}$  cor.
- 8.000 Intersect N. & S. line, 9 lks. N. of the  
cor. of secs. 11, 12, 13 + 14
- Gloucester
- West, on true line bet. secs. 11 + 14.  
Over mountainous land, thru  
forest of cedar & pinon.  
Ascend NE. slope of mesa.
- 23.60 Ridge + top of mesa, 275 ft. above  
sec. cor. bears NW. + SE.
- Descend.
- 40.00 Set an iron post, 3 ft. long, 1 in. in  
dia., 26 ins. in a mound of stone  
(Corner point on bed rock) for  $\frac{1}{4}$   
sec. cor. marked on brass caps  
 $\frac{1}{4}$  S 11 on N. half and S 14 on S.  
half, from which:  
A Cedar, 16 ins. diam., bears  $N. 80^{\circ} E.$   
100 lks. dist., marked  
 $\frac{1}{4}$  S 11 BT
- A cedar, 17 ins. diam., bears  $S. 33\frac{1}{4}^{\circ} W.$   
107 lks. dist., marked  
 $\frac{1}{4}$  S 14 BT
- 40.50 Wash in hollow, course NW.
- Ascend.
- 44.00 Ridge NW. + SE.
- Descend
- 62.50 Canyon, 125 ft. deep, course NW.
- Ascend
- 64.30 Ledge, bears NW. + SE.
- 74.00 Ridge, 100 ft. high, bears NW. + SE.
- 80.00 The cor. of secs. 10, 11, 14 + 15.  
Land mountainous.  
E. 23.60 chs. NE. slope of mesa, draining  
into Marble canyon.  
W 56.40 chs. NW. slope of mesa.  
Undergrowth, sage brush, some grass.

Subdivision of T. 21 S.R. 25 E.

Soil rocky, very poor sub-soil.  
 Sandy rocky, bed rock close to surface.  
 Timber cedar & Juniper.  
 The sky is overcast at noon.  
 Heavy storm of rain prevents field work in P.m.

October, 15, 1910

October 18: Heavy storm of rain prevents field work in A.M.  
 At 2<sup>h</sup> 15<sup>m</sup> P.m. I m.t. I set off  
 $38^{\circ} 59' N$  on the lat. arc.  $9^{\circ} 31' S$  on  
 the decl. arc. and determine a  
 meridian with the solar at the  
 corner of secs. 10, 11, 14 & 15.

Hence true.

$N^{\circ} 01' W$ , bet secs. 10 & 11.

Over mountainous land, thru  
 forest of cedar & juniper.

12.00 Ridge, NW. & SE.

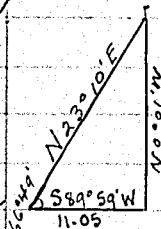
Descend.

19.30 West side of canyon & ledge, bears  
 NW & SE. On account of several  
 impassable ledges I am compelled  
 to triangulate across this canyon.  
 To determine the distance, I set  
 a flag on line on N. side, then  
 measure a base  $15.89^{\circ} 59' W$ . 1105 chs  
 to a point, from which the flag  
 bears  $N. 23^{\circ} 10' E$ . From the flag  
 the west end of the base bears

$S 23^{\circ} 10' W$ , therefore tang  $66^{\circ} 49' \times$  base  
 or  $2.335 \times 11.05$  chs = 25.86 chs which  
 added to 19.30 chs, makes:

45.10 To north side of canyon, bears  
 NW. & SE.

The point for the  $\frac{1}{4}$  sec. cor. falls  
 on ledge on side of canyon where  
 it cannot be set, therefore



at 40.00 chs.

Subdivision of T21 S.R. 25 E.  
chain

Set an iron post, 3 ft. long, 1 in. in dia.,  
26 ins. in a mound of stone & earth  
for witness corner to the  $\frac{1}{4}$  sec.

cor. marked on brace cap T21 S  
R25 E on N. half, S 11 on E. half  
S 10 on W. half, with W.C.  $\frac{1}{4}$  to  
the South, raise a mound of stone  
2 ft. base,  $1\frac{1}{2}$  ft. high. W. of corner.

It's impracticable

Ascend.

47.35 Ridge or narrow neck of mesa,  
bearing NW. + SE.

48.75 Descend abruptly into Marble canyon.

69.50 Wash + base of Marble Canyon,  
50 lks. wide, some water, 350 ft  
below top, course West.

Ascend.

80.00 Set an iron post, 3 ft. long, 2 ins. in  
dia., 24 ins. in the ground. for  
corner of secs. 2, 3, 10 + 11, marked  
on brace cap

T 21 S S 3 in NW,

R 25 E S 2 in NE,

S 11 in SE. and

S 10 in SW. quadrant,

from which

A piñon, 10 ins. diam., bears  $N. 57\frac{1}{2}^{\circ} E$ .

155 lks. dist., marked

T 21 S R 25 E S 2 BT

A piñon, 8 ins. diam., bears  $S. 46\frac{1}{4}^{\circ} E$ .

135 lks. dist., marked

T 21 S R 25 E S 11 BT

A cedar 9 ins. diam., bears  $S. 88\frac{1}{4}^{\circ} W$ .

155 lks. dist., marked

T 21 S R 25 E S 10 BT

A piñon 18 ins. diam., bears  $N. 48\frac{1}{2}^{\circ} W$ .

233 lks. dist., marked

T 21 S R 25 E S 3 BT

Land mountainous, cut by deep  
canyons with steep N. + S. slopes

Subdivision of T. 21 S. R. 25 E.

chains

Undergrowth some sage brush,  
No grades. Soil rocky & sandy very  
poor. sub-soil rocky & salty  
Timber cedar & pinon.

October 18, 1910

Extending thru secs. 2, 3 & 11 is  
a high mesa surrounded by  
a vertical wall of sandstone  
rock 200 to 400 ft. high. I make  
a careful search for a way to  
ascend this mesa but cannot  
find any. Not being able to connect  
lines between secs. 2 & 11, with  
the corner of secs. 1, 2, 11 & 12. and  
the line betw. secs 2 & 3 with the N. bdy.  
of the tp. I do not survey them.

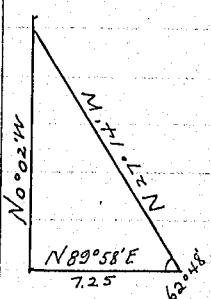
October 5: At 8<sup>h</sup> 19<sup>m</sup>. a.m., l.m. I  
set off  $38^{\circ} 56' N.$  on the lat. arc;  
 $4^{\circ} 32' S.$  on the decl. arc; and  
determine a meridian with the  
solar at the cor. of secs. 3, 4, 33 &  
34 on the S. bdy. of the tp. here-  
tofore described

Thence from

$7.0^{\circ} 02' W.$ , betw. secs. 33 & 34

Over mountainous land, thru  
forest of cedar & pinon.

6.00 S. side of coach creek canyon,  
across which I cannot chain,  
to determine the distance across,  
I set a flag on line on N. side,  
then measure a base  $77.89^{\circ} 58' E.$ ,  
7.25 chs. to a point from  
which, flag bears  $77.27^{\circ} 14' W.$  From  
the flag the east end of the base  
bearing  $52.27^{\circ} 14' E.$ , therefore tang  
 $62^{\circ} 48' \times$  base or  $1.945 \times 7.25 = 14.10$   
chs. which added to 6.00 chs makes



Subdivision of T. 21 S., R. 25 E.

chains.

20.10	To north side of canyon, bears E + SW.	
21.00	Ridge, bears $N. 80^{\circ} E + SW$ . Descend.	
38.25	Descend abruptly.	
40.00	Point for $\frac{1}{4}$ cor. falls in Gulch, 75 ft. deep, course West.	
40.75	Set an iron post, 3 ft. long, 1 in. in dia., 26 in. in the ground for $\frac{1}{4}$ sec. cor. marked on brass cap T 21 S R 25 E on N. half, S 34 on E. half, S 33 on W. half, with W C $\frac{1}{4}$ to the south; from which A gnomon, 12 in. diam., bears $N. 32\frac{3}{4}^{\circ} E$ 35 lks. dist., marked W C $\frac{1}{4}$ S 34 BT	
	A gnomon, 13 in. diam., bears S. $28\frac{1}{4}^{\circ} E$ 62 lks. dist., marked W C $\frac{1}{4}$ S 33 BT.	
	Ascend 70 ft.	
45.00	Ridge, bears E. + W.	
	Descend into Granite canyon.	
57.10	Wash + base of Granite canyon, 25 lks. wide, 275 ft. below ridge, course West.	
	Ascend from canyon.	
67.15	Ridge + top of canyon, bears E. + W. Descend.	
73.00	Hollow, drains SW.	
75.00	Road, bears $N. 80^{\circ} E + W$ .	
80.00	At base of mesa amongst boulders. Set an iron post, 3 ft. long, 2 in. in dia., 24 in. in the ground + mound of stone for corner of secs. 27, 28, 33 + 34, marked on brass cap	
	T 21 S S 28 in NW, R 25 E. S 27 in NE, S 34 in SE, and S 33 in SW quadrant, raise a mound of stone, 2 ft. base,	

Subdivision of T. 21 S., R. 25 E.

	1½ ft. high W. of corner. Pits impracticable. Land mountainous draining West. No undergrowth, very little grass. soil, rocky & gravelly Sub-soil, gravelly, very poor. Lumber, scattering cedar & Juniper
4.00	East, on a random line bet. secs. 27 & 34. Set temporary ¼ sec. cor.
8.02	Intersect N. & S. line of lots. S. of the cor. of secs. 26, 27, 34, & 35
15.50	Hence true S. $89^{\circ} 57'$ W. on true line bet. secs. 27 & 34 Overmountainous land, ascend land facing SE. Divide between Coach Creek and Granite canyon, bears SW. & $77.80^{\circ}$ E. Descend.
39.50	Granite canyon, rocks wide, Course SW.
40.01	Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for ¼ sec. cor. marked on brass Cap ¼ S 27 - on N. half & S 34 on S. half, raise a mound of stone, 2 ft. base, 1½ ft. high N. of corner. Pits impracticable.
47.00	Ravine, course S. Ascend.
49.25	Top of ascent and ridge, 125 ft. above ¼ cor. bears N. & S.
62.50	Road, bears NE. & $5.80^{\circ}$ W.
67.00	Ravine or hollow-drain SW.
80.02	The corner of secs. 27, 28, 33 & 34. Land mountainous draining W.

# Subdivision of T 2d. S., R 25 E

chains

Undergrowth short chadscale.  
No grass. Soil, rocky of granite  
formation, sub-soil gravelly very  
poor. No timber.

October 5: At this sec. cor. I set off  
 $4^{\circ} 36' S$ , on the decl. arc; and  
at  $11^h 49^m$  a.m. I m.t. observe  
the sun on the meridian; the  
resulting latitude is  $38^{\circ} 57'$ .

N.  $0^{\circ} 02' W$ , bet. secs. 27 + 28.

Over mountainous land.

Ascend S face of mesa over boulders.

11.50 Top of mesa + ridge, 200 ft above  
sec. cor., bears E. & W.

Gradually descend thru cedar  
and Pinon.

39.25 Begin steep descent into canyon.

40.00 Set an iron post, 3 ft. long,  $1\frac{1}{2}$  in  
dia., 26 ins. in the ground for  $\frac{1}{4}$   
sec. cor. marked on brass cap  $\frac{1}{4}$   
 $S 28$  on W. half and  $S 27$  on E. half,  
raise a mound of stone, 2 ft. base,  
 $1\frac{1}{2}$  ft. high W. of corner.

Post impracticable.

42.20 Wash, + bottom of canyon, course W.  
Ascend over ledges.

43.30 North side of canyon + ridge,  
bears E. & W.

57.28 Edge of high ledge over star  
canyon beds. St.  $\downarrow N 10^{\circ} W$ , across  
which I am unable to chain. To  
determine the distance I set a  
flag on line on same ledge North.  
Then measure a base  $N 8^{\circ} 57' W$ .

417 chs. to a point from which  
flag bears  $N. 16^{\circ} 36' E$ . From the flag  
the west end of the base bears  $S 16^{\circ} 36' W$ .  
by separate measurements of each angle  
they are found respectively  $81^{\circ} 55'$ ,

# Subdivision of T. 21 S., R. 25 E.

chains.

81° 33', 16° 32'; I compute the dist area as follows:  
 sin 81° 33' / sin 16° 32' x base or  $\frac{989 \times 417}{2.85} = 14.49$  chs.  
 also 57.28 + 14.49 chs =

71.77 To north side of same ledge and west side of Star canyon, bears S. 10° W., and N.E.

78.05 Top of ledge over star canyon bears N. 28° W., and S.E.

80.00 Point for cor. of secs. 21, 22, 27 and 28 falls on ledges where cor. cannot be set, therefore at this point 78.05 chs.

Set an iron post, 3 ft. long, 2 in. in dia., 24 in. in the ground for witness cor. to secs. 21, 22, 27, and 28, marked on brass cap, top of page representing north

T 21 S R 25 E  
 S. 21 | S. 22  
 WC |  
 S. 28 | S. 27.

Raise a mound of stone, 2 ft. base,  $1\frac{1}{2}$  ft. high W. of cor.

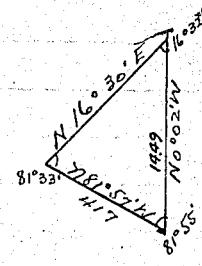
Pits impracticable

Land, mountainous draining north and west. Undergrowth some sage brush, no grass. Soil, rocky and gravelly, very poor, subsoil sandy and rocky. Timber Cedar and penon.

Mountainous land, 8.00 chs.

October 5, 1910

October 10, 1910: At 7<sup>h</sup> 47<sup>m</sup> a.m. L.M.T.; I set off 38° 58' on the lat. arc, 6° 26' S., on the decl. arc; and determine a meridian with the solar at the true cor point of secs.



Subdivision of T. 21 S., R. 25 E.

- 31, 32, 27 and 28  
Three I run  
 $77.89^{\circ} 57' E.$ , on random line bet.  
secs. 22 and 27.
- 20.70 Base of mesa and impassable cliff  
To determine the distance I set a  
flag on line on top, then measure  
a base,  $77.0^{\circ} 03' W.$ , 12. 50 chs. to a point  
from which flag bears  $S. 63^{\circ} 37' E.$ , from  
the flag the N. end of the base bears  
 $N. 63^{\circ} 37' W.$ , therefore tan  $63^{\circ} 34' \times$  base  
or  $2.01 \times 12.50$  chs. makes 25.13 chs. which  
added to 20.70 chs makes
- 45.83 To top of canyon and ledges.  
No temporary cor. set.
- 80.06 Intersect  $N. + S.$  line of lks. N. of the  
cor. of secs. 22, 23, 26 & 27.  
Three I run  
West, on tree line bet. secs. 22 & 27  
Over mountainous land through  
forest of cedar and pinon.
34. 21 To east side of high cliffs, bears  $N. + S.$   
Point for  $\frac{1}{4}$  sec. cor. will fall on inaccessible  
ground, therefore at this point  
Set an iron post, 3 ft. long, 1 in. in dia., 26 vis. in  
the ground and mound of stone for witness  
cor. to the  $\frac{1}{4}$  sec. cor., marked on brass cap T 21  
SR 25 E S 22 on N. half, S 27 on S. half, with W  
 $C \frac{1}{4} S$  to the West, from which  
A pinon, 12 vis. diam., bears  $N. 77\frac{1}{4}^{\circ} E.$ , 15 lks.  
dist., marked  $W C \frac{1}{4} S 22 B 7$ .  
A pinon 18 vis. diam., bears  $S. 55^{\circ} E.$ , 105 lks.  
dist., marked  $W C \frac{1}{4} S 27 B 7$ .
34. 22 1/2 vis. dist., marked  $W C \frac{1}{4} S 27 B 7$ .
59. 36 1/2 vis. of mesa-did wash in Star Canyon  
5.25 ft. below top, course  $N. 20^{\circ} W.$   
A second west side of canyon 4.00 ft. to  
the true corner point of secs. 21, 22, 27 & 28  
land, mountainous cut by a deep canyon  
draining north, with steep E. & W. slopes.  
Undergrowth, sage brush, some grass. Soil,
- 80.06

## Subdivision of T. 21 S. R. 25 E.

chain

rocky and sandy, very poor, sub-soil  
sandy & rocky. Lumber cedar &  
juniper.

October 10, 1910

October 11, 1910: At 8<sup>h</sup> 17<sup>m</sup> a.m., l.  
m.t. I set off  $38^{\circ} 58' N.$  on the lat.  
arc,  $6^{\circ} 49.4' S.$  on the decl. arc; and  
determine a meridian with the  
solar at the true corner point  
of secs. 21, 22, 27 & 28.

Hence true

$7.0^{\circ} 02' W.$ , bet. secs. 21 & 22, counting  
distances from true corner point.  
Over mountainous land thru

forest of cedar &amp; juniper.

Descend eastern slope mesa.

Wash & base of Star canyon, 650 ft.  
below top. Course  $7.0^{\circ} W.$

Hence over land facing west.

Set an iron post, 3 ft. long, 1 in.  
in dia., 26 in. in the ground,  
for  $\frac{1}{4}$  sec. cor. marked on brass  
caps  $\frac{1}{4} S 21$  on W. half and  $S 22$   
on E. half, from which

A cedar, 6 in. diam., bears  $7.36\frac{1}{2}' E.$   
 $41$  lks. dist., marked  
 $\frac{1}{4} S 22 BT.$

No trees in sec. 21.

raise a mound of stone, 2 ft. base,  
 $1\frac{1}{2}$  ft. high, W. of corner.

Fork of star Canyon, course West.  
Star canyon is West, 1 ch.

Begin ascent towards W. point  
of mesa.

Point of mesa, projects W.

Descend

Point for corner of secs. 15, 16, 21 &  
22 in wash. course NW.

Set an iron post, 3 ft. long, 2 in. in  
dia., 24 in. in the ground for

Subdivision of T. 21 S. R. 25 E.

chains

witness corner to secs. 15, 16, 21 + 22.  
marked on brace cap, tops  
of page representing north

T 21 S R 25 E

S 16 | S 15

w.e.

S 21 S 22.

from which

A cedar, 14 ins. diam., bears  $77^{\circ} 12' E.$

37 lks. dist., marked

W C T 21 S R 25 E S 15 BT

A juniper, 9 ins. diam., bears  $S. 22^{\circ} E.$ ,  
100 lks. dist., marked

W C T 21 S R 25 E S 22 BT

A juniper, 14 ins. diam., bears  $S. 14^{\circ} W.$

233 lks. dist., marked

W C T 21 S R 25 E S 21 BT

A juniper 10 ins. diam., bears  $N. 76^{\circ} W.$

98 lks. dist., marked

W C T 21 S R 25 E S 16 BT

Land mountainous, draining north  
with W.s east slopes. No undergrowth,  
some grass, Soil, rocky, very poor.  
Sub. soil, sandy & rocky. Some  
cedar & juniper timber

East, on a random line bet. secs.

15 & 22.

40.00 Set temporary  $\frac{1}{4}$  cor.

80.10 Intersect N. & S. line 9 lks. N. of the  
cor. of secs. 14, 15, 22 & 23.

Hence, true

$N. 89^{\circ} 56' W.$ , on true line bet. secs.

15 & 22.

Descend thru dense cedar & juniper  
along narrow, rim of mesa.

35.70 Edge of mesa bears  $S. 85^{\circ} W.$  &  $N. 75^{\circ} E.$   
Point for  $\frac{1}{4}$  sec. cor. will fall on  
solid sandstone bed rock, therefore

Subdivision of T. 21 S., R. 25 E.

chain

Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for witness cor. to the  $\frac{1}{4}$  sec. cor., marked on brass cap, T 21 S R 25 E S 15 on N. half, S 22 on S. half and W C  $\frac{1}{4}$  to the west, from which

A pinon, 8 ins. diam., bears N.  $61\frac{1}{2}^{\circ}$  E., 164 lks. dist., marked

W C  $\frac{1}{4}$  S 15 BT

A pinon, 18 ins., diam., bears S.  $34\frac{1}{2}^{\circ}$  W., 113 lks. dist., marked

W C  $\frac{1}{4}$  S 22 BT

40.05 Point for  $\frac{1}{4}$  sec. cor. cannot be set.

46.00 Gulch, drains NW.

Ascend 175 ft. to

57.50 Narrow rim of mesa, bears NW. and SE.

70.00 Leave mesa, bears NE. and SW.

Descend abruptly 275 ft. to

80.10 The true cor. point of secs. 15, 16, 21 and 22.

Land mountainous draining W., with W. and N. slopes. Undergrowth sage brush and chaparral. No grass. Soil, rocky and decayed vegetation, very poor. Sub-soil, sandy and rocky. Timber cedar and pinon.

October 11: At this sec. cor., I set off  $6^{\circ} 53'$  S. on the decl. arc; and at  $11^{\text{h}} 47^{\text{m}}$  a.m. l.m.t., observe the sun on the meridian; the resulting lat. is  $38^{\circ} 59'$

October 11, 1910

October 19: At  $8^{\text{h}} 15^{\text{m}}$  a.m. l.m.t., I set off  $38^{\circ} 59'$  on the lat. arc,  $9^{\circ} 47'$  S., on the decl. arc; and determine a meridian with the solar at the true cor. point of secs. 15, 16, 21 and 22.

chains.

Subdivision of T. 21, S., R. 25 E.

- Hence I run  
N. 0° 02' W., bet. secs. 15 and 16.  
Over mountainous land, through  
forest of cedar and pinon.  
Wash in canyon, 25 ft. wide,  
course S. 80° W.  
Base of mesa and high ledges, up  
which I cannot chain. To determine  
the distance, I set a flag on line on  
top, then measure a base line N. 89°,  
58' E., 8.00 chs., to a point from which  
flag bears N. 32° 35' W., from the flag  
the east end of the base, bears S. 32°  
35' E., therefore tan.  $57^{\circ} 27'$   $\times$  base  
or  $1.566 \times 8 = 12.53$  chs., which  
added to 8.70 chs. makes  
21.23 To top of mesa, 375 ft. above base,  
bears E. and W. 12 chs.  
Hence over broken mesa.  
40.00 Set an iron post, 3 ft. long, 1 in. in  
dia., 26 ins. in the ground for  $\frac{1}{4}$  sec.  
cor., marked on brass cap  $\frac{1}{4}$  S 16 on  
W. half and S 15 on E. half, raise a  
mound of stone, 2 ft. base,  $1\frac{1}{2}$  ft. high  
W. of cor.  
Pits impracticable.  
47.50 Leave mesa, bears N. 20° W. and SE.  
Descend over rocky NE. slope of canyon.  
72.60 Wash in canyon, 275 ft. below top,  
course N. 20° W.  
77.00 Same canyon wash, drains NE.  
Ascend  
80.00 Set an iron post, 3 ft. long, 2 ins. in  
dia., 24 ins. in the ground for cor. of  
secs. 9, 10, 15 and 16 with brass cap  
marked

T 21 S S 9 in NW.,

R 25 E S 10 in NE.,

S 15 in SE. and

18958 E.  
800 57° 27'

Subdivision of T. 21 S., R. 25 E.

chain.

S' 16 in SW. quadrant,  
from which

A. cedar, 12 ins. diam., bears N.  $27\frac{1}{2}^{\circ}$  E.,  
66 lks. dist., marked

T 21 S R 25 E S' 10 BT

A pinon, 14 ins. diam., bears S.  $18^{\circ}$  E.,  
81 lks. dist., marked

T 21 S R 25 E S' 15 BT

A pinon, 10 ins. diam., bears S.  $77^{\circ}$  W.,  
82 lks. dist., marked

T 21 S R 25 E S' 16 BT

A cedar., 10 ins. diam., bears N.  $50\frac{1}{2}^{\circ}$  W.,  
97 lks. dist., marked

T 21 S R 25 E S' 9 BT

Land mount above draining N. and  
W. Undergrowth sage brush. No  
grass. Soil, rocky and sandy, very  
poor. Sub-soil sandy; bed rock  
close to surface. Timber cedar and  
pinon.

S.  $89^{\circ} 56'$  E., on random line bet.  
secs. 10 and 15

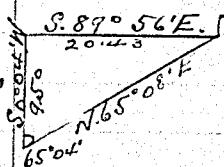
Set temporary  $\frac{1}{4}$  sec. cor.

Base of impassable mesa and ledges  
up which I cannot chain. To deter-  
mine the distance, I set a flag on  
line on top, then measure a base line,  
S.  $0^{\circ} 04'$  W., 9.50 chs., to a point from  
which the flag bears N.  $65^{\circ} 08'$  E., from  
the flag, the S. end of the base bears  
S.  $65^{\circ} 08'$  W., therefore tan.  $65^{\circ} 04' \times$   
base, or  $2.15 \times 9.50$  chs. = 20.43 chs.,  
which added to 47.20 chs., makes  
to top of mesa.

Intersect N. and S. line 3 lks. N. of  
the cor. of secs. 10, 11, 14 and 15

Thence I run

N.  $89^{\circ} 55'$  W., on true line bet. secs.  
10 and 15.



Subdivision of T. 21 S., R. 25 E.

chain	Over land sloping W., through forest of cedar and pinon.
12.53	Edge of mesa, bears South and NW. Elevation of 500 ft. from mesa.
32.96	Base of mesa, bears NW. and SE.
37.90	Canyon and wash, 545 ft. below mesa, course NW. Ascend.
40.00	Set an iron post, 3 ft. long, 1 in. in dia., 26 in. in the ground for $\frac{1}{4}$ sec. cor., marked on brass cap $\frac{1}{4}^{\circ} S 10'$ on N. half and $S 15'$ on S. half, from which A pinon, 22 in. diam., bears $S. 66\frac{1}{4}^{\circ} W.$ , $144$ lks. dist., marked $\frac{1}{4}^{\circ} S 15' BT.$
	A cedar, 11 in. diam., bears $N. 7\frac{3}{4}^{\circ} W.$ , $111$ lks. dist., marked $\frac{1}{4}^{\circ} S 10' BT.$
68.50	Top of ridge and spur of mesa, 400 ft. above canyon, bears NW. and SE. Ascend abruptly over ledges. Wash in canyon, course NW.
78.00	Ascend
80.08	The cor. of secs. 9, 10, 15 and 16. Land mountainous draining NW., with steep slopes of mesas. Under-growth, chaparral. No grass. Soil, rocky on rocky sub-soil, very poor. Timber, cedar and pinon. October 19: The sky is overcast at noon, observations for lat. are impossible

October 19, 1910

October 20: At  $8^h 15^m$  a.m. l.m.t., I set off  $39^{\circ} 00'$  on the lat. arc;  $10^{\circ} 09' S.$  on the decl. arc; and determine a meridian, with the solar at the cor. of secs. 9, 10, 15 + 16.  
Hence I run  
 $71.0^{\circ} 02' W.$ , bet. secs. 9 and 10.

Subdivision of T. 21 S., R. 25 E.

chains

- Over mountainous land through forest of cedar and pinon.  
 2.50 Wash in canyon, course N.  $20^{\circ}$  W.  
 Ascend rocky spur over land sloping SW.  
 17.50 Top of spur, 12.5 ft. above sec. cor., projects NW.  
 Descend towards Grand river.  
 29.90 To top of granite ledges over Grand river.  
 At this point the river is approximately 7 chains north, and flows through a canyon with vertical walls. I am unable to descend into the canyon either by chaining or triangulation; therefore at this point set an iron post, 3 ft. long, 1 m. in dia., 26 ins. in the ground and mound of stone for witness cor. to the meander cor., marked on brass cap, top of page representing north.

T 21 S R 25 E.

W.C.M.C.

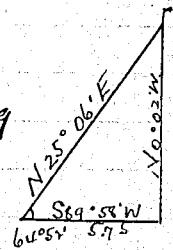
S9 | S10

Raise a mound of stone, 2 ft. base, 1 $\frac{1}{2}$  ft. high S. of cor.

Pit impracticable

To determine distance across river, I set a flag on left bank, then measure a base S.  $89^{\circ} 58'$  W., 5.75 chs., to a point from which flag bears N.  $25^{\circ} 06'$  E., from the flag the west end of the base bears S.  $25^{\circ} 06'$  W., therefore tan.  $64^{\circ} 52' \times$  base or  $2.13154 \times 5.75$  chs = 12.25 chs, which added to 29.90 chs. makes

H2.15 To right bank of Grand river.  
 Set an iron post, 3 ft. long, 1 m. in dia., 26 ins. in the ground and mound of stone for meander cor. of fract. secs. 9 and 10 marked on brass cap T 21 S R 25 E on N. half, S 10 on E. half and



Subdivision of T. 21 S., R. 25 E.

chains

	MCSq on W. half, raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high N. of cor.
	Pit impracticable Point for $\frac{1}{4}$ sec. cor. <sup>at 40.00 chgs.</sup> falls in river, no cor. set.
47.00	Ascend from canyon.
	Top of canyon, 200 ft. above river, bears E. and W.
55.20	Begin ascent of mesa. Top of mesa and ledge, 75 ft. high, bears $N.15^{\circ}E$ and $S.80^{\circ}W$ . Thence over mesa top.
60.00	Set an iron post, 3 ft. long, 2 ins. in dia, & 4 ins. in the ground for cor. of secs. 3, 4, 9 + 10, marked on brass cap T 21 S 5 1/4 in NW., R 25 E S 3 in NE., $S 10$ in SE. and Sq in SW. quadrant, from which a penon, 10 ins. diam., bears $N.51\frac{1}{2}^{\circ}E$ , 64 lks. dist., marked
	T 21 S R 25 E S 3 BT
	a penon, 8 ins. diam., bears $S.40\frac{1}{2}^{\circ}E$ , 141 lks. dist., marked
	T 21 S R 25 E S 10 BT
	a penon, 18 ins. diam., bears $S.66\frac{1}{2}^{\circ}W$ , 223 lks. dist., marked
	T 21 S R 25 E S 9 BT
	a penon, 15 ins. diam., bears $N.46\frac{1}{2}^{\circ}W$ , 101 lks. dist., marked
	T 21 S R 25 E S 4 BT
	Land, mountainous, with steep rocky north and south slopes. No undergrowth, no grass. Soil, rocky: very poor. Sub-soil, rocky and gravelly.

Subdivision of T. 21 S. R. 25 E.

chains

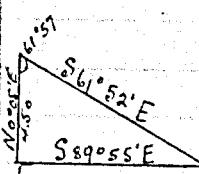
Lumber, Cedars & Pinon.

S $89^{\circ} 55' E$ , on a random line bet  
secs. 3 + 10

35.99 Right bank of Grand river. Set  
temporary meander cor.

To determine the distance across,  
I set a flag on left bank of Grand  
river, then measure a base

N $0^{\circ} 05' E$ , 450 chs. to a point, from  
which flag bears S $61^{\circ} 52' E$ . from  
the flag the north end of the base  
bears N $61^{\circ} 52' W$ , therefore tan.



$$61^{\circ} 57' \times \text{base or } 1.8167 \times 450 =$$

8.45 which added to 3600 makes

44.44 To left bank Grand. river.

Set temporary meander cor.

Intersect N. & S. line of lks. S. of the  
cor. of secs. 2, 3, 10 + 11

True Line

N $89^{\circ} 58' W$ , on true line bet. secs. 3 + 10  
Over mountainous land, thru  
forest of cedar & pinon.

15.85 Low ridge bears N. & S.  
descend.

27.95 Bottom of Marble Canyon, 125 ft.  
below ridge, course N $60^{\circ} W$ .  
Ascend

34.45 Top of canyon & spur, projects NW.

25.70 To left bank of Grand river set,  
an iron post, 3 ft. long, 1 in in  
dia., 26 ins. in the ground and  
mound of stone for meander cor.  
of fract. secs. 3 + 10, marked on  
brass cap T 21 S R 25 E S 3 MC  
on N. half & S 10 on S. half,  
raise a mound of stone, 2 ft.  
base 1 1/2 ft. high E. of cor.

Get impracticable

40.07 Post for 1/4 sec cor - cor cannot be est.

Chains

# Subdivision of T. 21 S.R 25 E.

44.15 To right bank of Grand river  
Set an iron post, 3 ft. long, 1 in. in  
dia., 26 ins. in the ground for  
meander cor. of sec. 3 & 10  
marked on brass cap T 21 S R 25  
E S 3 on N. half and M C S 10  
on S. half, raise a mound of  
stone, 2 ft. base,  $1\frac{1}{2}$  ft. high W.  
of corner.

Fit impracticable.

Ascend East side of mesa.

64.35 Top of mesa, 375 ft. above river,  
bears N. & S.

Hence over mesa top

80.14 To the corner of sec. 3, 4, 9 & 10  
land mountainous draining SW.  
Undergrowth sage brush. No grass.  
Soil, rocky & sandy & rates, sub soil,  
sandy & rocky. Bed rock close to surface  
Juniper, some cedar & piñon.

October 20: At this sec. cor. I set off  
 $10^{\circ} 13'$  S. on the decl. arc; and at  
 $11^{\text{h}} 45^{\text{m}}$ . a. m. l. m. t. observe the  
sun on the meridian; the result-  
ing latitude is  $39^{\circ} 01'$ .

October 20 - 1910

October 25.

From the cor. of sec. 3, 4, 9 & 10  
herefore described, true  
 $71^{\circ} 02'$  W., on true line bet. sec. 3 & 4.

Over mountainous land thru  
forest of cedar & piñon.

Low ridge, bears E. & W.

Gradually descend.

18.00 Set an iron post, 3 ft. long, 1 in. in  
dia., 26 ins. in the ground for  
 $\frac{1}{4}$  sec. cor. marked on brass cap  $1\frac{1}{4}$  S 4  
on W. half, and S 3 on E. half,  
from which

Subdivision of T. 21 S., R. 25 E.

columns.

A cedar, 22 ins. diam., bears  $S 57^\circ E.$   
 127 lks. dist., marked  
 $\frac{1}{4} S 3 B T$

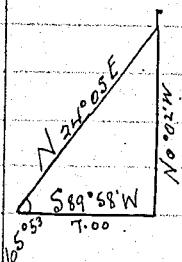
A cedar 8 ins. diam., bears  $S 68 \frac{1}{4}^\circ W.$ ,  
 132 lks. dist., marked  
 $\frac{1}{4} S 4 B T$

4.1.30 Begin descent into Grand river  
 Canyon.

58.50 To right bank of Grand river, 350  
 ft below top

Set an iron post, 3 ft. long, 1 in.  
 in dia., 26 ins. in the ground for  
 meander cor. of fract. secos. 3 + 4,  
 marked on brass caps T 21 S R 25 E  
 on N. half, M.C. S 3 on E. half +  
 S 4 on W. half, raise a mound of  
 stone 2 ft. base  $1\frac{1}{2}$  ft. high N. of cor.  
 Pit impracticable

To determine the distance across  
 the river, which runs parallel to  
 my line. I set a flag on line on  
 Right bank, then measure a base  
 $S. 89^\circ 58' W.$ , 7 chs. to a point from  
 which flag bears  $N. 24^\circ 05' E.$  from the  
 flag the west end of my base bears  
 $N. 24^\circ 05' W.$  therefore tan.  $65^\circ 53'$  x base  
 or  $2.233 \times 7$  chs. = 15.63 chs., which  
 added to 58.50 makes



74.13 To right bank of Grand river.

Set an iron post, 3 ft. long, 1 in. in  
 dia., 26 ins. in the ground for  
 fract. secos. 3 + 4 marked on brass  
 caps T 21 S R 25 E on N. half, S 3  
 on E. half + M.C. S 4 on W. half,  
 raise a mound of stone, 2 ft. base,  
 $1\frac{1}{2}$  ft. high N. of cor.

Pit impracticable.

1.37 Intersect 4<sup>th</sup> Standard Parallel south  
 542 chs. west. of the meander cor.  
 of fract. sec. 4. heretofore described

chains.

Subdivision of T. 21 S. R. 25 E.

Set an iron post 3 ft. long. 2 in. in dia., 24 in. in the ground and mound stone for closing corner of secs. 3 & 4 marked on brass cap T 20 S R 25 E S 33 S 34 C C on N. half, S 3 in SE, and S 4 in SW quadrant raise a mound of stone, 2 ft. base,  $1\frac{1}{2}$  ft. high, S. of cor.

Pits impracticable

Land mountainous, drawing SE. Undergrowth, some sage. No grass. Soil. rocky, very poor, sub soil rocky. Lumber, some cedar & pinon.

October 25, 1910

October 6: At 8<sup>h</sup>. 18<sup>m</sup> a.m., l.m.t., I set off  $38^{\circ} 56'$  on the lat. arc;  $41^{\circ} 55' S$  on the decl. arc; and determine a meridian with the solar at the corner of secs. 4, 5, 32 & 33 on the S. bdy. of the tp. heretofore described. Hence from

N.  $0^{\circ} 03' W$ , bet. secs. 32 & 33.

Over mountainous land thru scattering cedar & pinon, over ridges and draws putting NW.

4.00 Set an iron post, 3 ft. long, 1 in. in dia., 26 in. in the ground for  $\frac{1}{4}$  sec. cor. marked on brass cap  $\frac{1}{4} S 32$  on W. half and S 33 on E. half, raise a mound of stone, 2 ft. base,  $1\frac{1}{2}$  ft. high, W. of corner. Pits impracticable

54.00 Begin descent into Granite Canyon.

57.00 Wash in canyon, course west.

Ascend

62.50 Top of canyon's ridge, bears E. & W. Road, bears E. & W.

63.50 Ascend toward mesa.

78.50 Base of ledges. bears SE. & W.

Subdivision of T. 2 S. R. 25 E.

chaind

80.00	<p>Point for cor. sec. 28, 29, on rock wall      no cor. set; point inaccessible.      Land mountainous</p> <p>S 57.00 chs. NW. slope. Undergrowth      sage brush, some grass. Soil gravelly      surface, sub soil, sandy &amp; gravelly      very poor. N. 23. chs. rocky S. &amp; SW. slope      no undergrowth, no grass. Soil, rocks      sub soil, rocky, very poor. Timber,      Cedars &amp; piñon</p>
	<p>East, on a random line bet. secs.      28 &amp; 33</p>
40.00	Set temporary $\frac{1}{4}$ cor.
79.90	Intersect N. & S. line 5 lks. S. of the cor. of secs. 27, 28, 33 & 34.
	<p>Hence from      S. <math>89^{\circ} 58' W.</math>, on true line bet. secs. 28 &amp; 33.      over mountainous land thru forest      of cedar &amp; piñon.</p>
15.45	<p>Ascend rocky land facing SE.      Spur, 150 ft. above cor. projects SW.      Descend.</p>
26.80	Base of mesa, bears NW. & SE. Ascend rocky SE. slope.
39.95	<p>Set an iron post, 3 ft. long, 1 in. in      dia., 26 in. in the ground for <math>\frac{1}{4}</math> sec. cor. marked on brass cap  <math>\frac{1}{4} S 28</math> on N. half and S. 33 on S.      half, from which</p> <p>A piñon, 17 in. diam., bears <math>77.32\frac{1}{2}^{\circ} E.</math>      8.2 lks. dist., marked  <math>\frac{1}{4} S 28</math> BT</p>
	<p>A piñon, 10 in. diam., bears S. <math>40\frac{1}{3}^{\circ} W.</math>,      107 lks. dist., marked  <math>\frac{1}{4} S 33</math> BT.</p>
64.15	Lops of a high rocky spur, projects S. Descend over ledges
79.90	The true corner point of secs. 28, 29

chain.

# Subdivision of T. 21 S., R. 25 E.

32 + 33.

Land mountainous with S. slope  
Undergrowth some sage brush.  
No grass. Soil, rocky. Very poor.  
Sub-soil, rocky & sandy. Lumber  
Some cedar & Juniper.

N. 0° 03' W., bet. secs. 28 + 29. Ass. over ledges  
1.00 Top of ledges, bears E. & W.  
Set an iron post, 3 ft. long, 1 in. in  
dia., 24 in. in the ground &  
mound of stone for witness corner  
to secs. 28, 29, 32 + 33, marked on  
brass cap, top of page representing  
North

T 21 S R 25 E

S 29 S 28

w.c.

S 32 S 33.

from which

A juniper, 10 in. diam., bears N. 16½° E.,  
20 lvs. dist., marked  
W C T 21 S R 25 E S 28 B T.

No trees in remaining secs.  
raise a mound of stone 2 ft. base  
1½ ft. high W. of cor.  
Pits impracticable

13.60 Top of ridge & mesa, 175 ft. above  
witness cor., bears East. S. 80° W.

29.50 Ridge & south side of canyon,  
bears E. & W.

Descend over ledges.  
125 ft. below top.

Set an iron post, 3 ft. long, 1 in. in  
dia., 26 in. in the ground for  $\frac{1}{4}$   
sec. cor. marked on brass caps  
 $\frac{1}{4}$  S 29 on W half and S 28 on  
E. half, from which.

A cedar, 8 in. diam., bears S. 25° E.,

## chain Subdivision of T. 21 S., R. 25 E.

43 lks. dist., marked  
 $\frac{1}{4}$  sec. cor. S 28 BT

A cedar, quis. diam., bears S.  $49\frac{1}{4}^{\circ}$  W.,  
 73 lks. dist., marked  
 $\frac{1}{4}$  sec. cor. S 29 BT

October 6: At this  $\frac{1}{4}$  sec. cor. I set off  
 $4^{\circ} 59' S.$  on the decl. arc; and at  
 $11^{\text{th}} \frac{48''}{m}$  a.m. l.m.t. observe the  
 sun on the meridian, the resulting  
 latitude is  $38^{\circ} 57'$ .

41.90 Wash in canyon, 25 lks. wide,  
 course N.  $80^{\circ}$  W.

Ascend over small ledges.

54.00 Ridge & top of canyon, bears N.  $80^{\circ}$  W.  
 and S.  $80^{\circ}$  E.

80.00 Set an iron post, 3 ft. long, 2 in. in  
 diam., 24 in. in the ground for  
 cor. of secs. 20, 21, 28 & 29, marked  
 on brass cap,

T 21 S S 20 in NW.,

R 25 E S 21 in NE.,

S 28 in SE. and

S 29 in SW. quadrant,

raise a mound of stones, 2 ft. base,  
 $1\frac{1}{2}$  ft. high W. of corner.

Pits impracticable

Land mountainous cut by canyons  
 draining west, with N. & S. slopes.  
 Undergrowth, sage brush, no grass.  
 Soil, sandy & rocky, poor. Sub-  
 soil, sandy & rocky, bed rock  
 about 3 ft. deep. Flows some  
 cedar & juniper.

N.  $89^{\circ} 58'$  E., on a random line, bet.  
 secs. 21 & 28

4.00 Set temporary  $\frac{1}{4}$  sec. cor.

9.98 Intersect N. & S. line 17 lks. N. of  
 the true corner point of secs. 21, 22,  
 27 & 28.

chain

# Subdivision of T. 21 S.R. 25 E.

- Hence true  
 $71.89^{\circ} 55' W$ , on true line bet. secs. 21 & 28  
over mountainous land through  
forest of cedar & pinon.
- 1.30 Top of west side of Star canyon &  
ledges, bears  $71.28^{\circ} W$  &  $S 25^{\circ} E$ .  
Hence over mesa top.
- 19.30 Wash, near head of canyon, course SW.  
21.00 Point of small spur, projects S.  
23.00 Same wash, course NW.  
25.00 Spur, projects N.  
39.99 Set an iron post, 3 ft. long, 1 in. in  
dia., 26 in. in the ground, for  
 $\frac{1}{4}$  sec. cor. marked on brass cap  
 $\frac{1}{4} S 21$  on N. half and  $S 28$  on  
S half, from which  
A cedar, 13 in. diam., bears  $S 74\frac{1}{2}^{\circ} W$ ,  
41 lks. dist., marked  
 $\frac{1}{4} S 28$  BT  
A cedar, 12 in. diam., bears  $71.60\frac{1}{2}^{\circ} W$ ,  
62 lks. dist., marked  
 $\frac{1}{4} S 21$  BT
- 79.98 The cor. of secs. 20, 21, 28 & 29.  
Land, rolling mesa top draining  
NW. Undergrowth sage brush.  
Some good grass. Soil sandy &  
gravelly surface, quite good, sub-  
soil sandy, bed rock about 4 ft. dep.  
Timber some cedar & pinon

October 6, 1910

October 12: At 7<sup>th</sup> 47<sup>m</sup> a.m. l.m.t.  
I set off  $38^{\circ} 58'$  on the lat. arc;  
 $7^{\circ} 11'$  S. on the decl. arc; and  
determine a meridian with the  
solar at the cor. of secs. 20, 21, 28  
& 29.

Hence true

$71.0^{\circ} 03' W$ , bet. secs. 20 & 21.

over rolling mesa top, through

Subdivision of T. 21 S. R. 25 E.

chains.

27.80

scattering forest of cedar & piñon  
Ridge, 75 ft. above sec. cor. bears E. & SW.  
descend

40.00

Set an iron post, 3 ft. long, 1 in. in  
dia., 26 ins. in the ground for  $\frac{1}{4}$   
sec. cor. marked on brass cap  $\frac{1}{4}$   
 $S\ 20$  on W. half and  $S\ 21$  on E. half,  
from which

A cedar, 16 ins. diam., bears  $N. 29\frac{1}{2}^{\circ}$  E.,

42 lks. dist., marked

$\frac{1}{4}\ S\ 21$  BT

A cedar, 18 ins. diam., bears  $N. 34^{\circ}$  W.,

75 lks. dist., marked

$\frac{1}{4}\ S\ 20$  BT.

40.60

Begun to descend towards canyon.

51.35

Ledge over head of canyon,  
bearing NW. & SE. 1 ch. thence  $N. 18^{\circ}$  E.

descend

52.00

wash in canyon, course NW  
thence over rocky land sloping W.

62.50

Canyon from the SE. & wash, 25  
lks. wide, course West.

80.00

Ascend steep rocky SW. slope.

200 ft. above canyon.

Set an iron post, 3 ft. long, 2 ins. in dia.  
24 ins. in the ground for cor. of secs.  
16, 17, 20 & 21 marked on brass cap

T 21 S 17 in NW.,

R 25 E S 16 in NE.,

$S\ 21$  in SE. and

$S\ 20$  in SW. quadrant,

raise a mound of stone, 2 ft. base,  $1\frac{1}{2}$  ft.  
high, W. of cor.

Pits impracticable

Land rolling & mountainous

55.35 rolling mesa top. Undergrowth  
sage brush, some grass. Soil, sandy,  
slab soil, sandy & gravelly, bed rock  
about 4 ft. deep. N. 28.65 chs W. & SW.

slopes of canyon. Soil rocks, sub-soil

Subdivision of T. 21 S., R. 25 E.

chains

rocks. very poor. Limber, some cedar & Juniper.

- 5.89° 55' E., on a random line bet. secs. 16 & 21.  
 5.50 West side of impassable ledge. Offset as follows.  
     North 5 chs, then on offset line  
     S 89° 55' E., 10 chs, then  
     South 5 chs: to random line  
 4.00 Set temporary  $\frac{1}{4}$  cor. /  
 79.94 Intersect N. & S. line 3 lks. N. of the true cor. point of secs. 15, 16, 21 & 22  
 Hence, true  
 N. 89° 54' W., on true line bet. secs. 16 & 21.  
 over mountainous land thru  
 forest of cedar & Juniper.  
 Descend.  
 14.90 Wash in Star canyon, 50 lks. wide,  
 course N. 25° W.  
 Ascend E. face mesa  
 39.07 Point for  $\frac{1}{4}$  sec. cor. falls on solid  
 rock ledge, corner cannot be set.  
 41.14 Top of mesa + ledge, 480 ft. above  
 canyon, bears N 35° W - S 35° E.  
 Set an iron post, 3 ft. long, 1 in. m.  
 dia., 26 ins. in the ground for witness  
 cor. to the  $\frac{1}{4}$  sec. cor. marked on  
 brass cap T 21 S R 25 E. S 16 on N. half,  
 S 21 on S. half, with W C  $\frac{1}{4}$  to the  
 east, raise a mound of stone 2 ft.  
 base,  $1\frac{1}{2}$  ft. high, N. of corner.  
 Its impracticable  
 October 12: At this corner I set off  
 $7^{\circ} 16'.1$  S. on the decl. arc; and at  
 11  $47^{\text{m}}$ . a.m. l. m. t. observe the sun  
 on the meridian; the resulting lat.  
 is  $38^{\circ} 59'$ .  
 64.44 To east side of impassable cliffs,  
 bears N 80° W - SE. To pass which

Subdivision of T 21 S. R. 25 E.

chains

I offset as follows.

N. 500 chs.: then run on offset line  
 $789^{\circ} 54' W$

- 74.44 Offset S. 5 chs. to true line.
- 77.50 Spur + top of ledge, projects SW.  
 Descend abruptly.
- 79.94 The cor. of secs. 16, 17, 20 + 21  
 Land mountainous, draining NW.,  
 with east + west slopes. Undergrowth  
 sage brush, some grass. Soil rocky  
 very poor. sub-soil rocky + sandy, bed  
 rock close to surface  
 timber, some cedar + juniper.

$7.0^{\circ} 03' W$ , bet. secs. 16 + 17

Over mountainous land thru scattering  
 forest of cedar + juniper along base of ledge  
 land facing West.

21.25 Top of ledge + mesa bears N.W. + S.  $10^{\circ} E$ .  
 Hence across mesa.

36.45 Leave mesa bears  $7.80^{\circ} W$ . and S.  $80^{\circ} E$ .  
 Descend abruptly.

40.00 Set an iron post, 3 ft. long, 1 in. in  
 dia., 26 ins. in a mound of stone  
 and earth for  $\frac{1}{4}$  sec. cor. marked  
 on brass cap  $\frac{1}{4} S 17$  on W. half,  
 and S 16 on E. half, raise a  
 mound of stone 2 ft. base,  $1\frac{1}{2}$  ft.  
 high W. of cor.

It's impracticable

Precipitous descent over ledges  
 down which I cannot chain. To  
 determine the distance I set a  
 flag on line north on left bank  
 of Grand river and also erect a  
 signal at the  $\frac{1}{4}$  sec. cor. From my  
 flag I measure a base  $S 66^{\circ} 33' E$  13.06  
 chs to a point from which flag at  
 $\frac{1}{4}$  cor. bears  $S 52^{\circ} 10' W$ . From the  $\frac{1}{4}$   
 cor. the east end of my base bears

chain

## Subdivision of T. 21 S. R. 25 E.

N.  $52^{\circ} 10' E.$  By separate measurement of each angle they are found respectively  $66^{\circ} 30'$ ,  $61^{\circ} 17'$  &  $52^{\circ} 13'$ . I compute the distance as follows.

$$\frac{\sin 61^{\circ} 17'}{\sin 52^{\circ} 13'} \times \text{base or } \frac{8.77 \times 13.66}{7.90} = 14.50$$

chs; also,  $40.00 + 14.50$

54.50 To left bank of Grand river  
Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground and mound of stone for meander cor. of fract. secs. 16 & 17, marked on brass caps T 21 S R 25 E. on N. half, MC S 16 on E. half and S 17 on W. half, raise a mound of stone, 2 ft. base,  $1\frac{1}{2}$  ft. high S. of cor.  
Pit impracticable

To determine distance across river, I set a flag on line on right bank, then measure a base  $N 89^{\circ} 57' E.$ , 4 chs to a point, from which flag bears  $N. 26^{\circ} 03' W.$  From the flag the East end of base bears  $S 26^{\circ} 03' E.$ ; therefore  $\tan 64^{\circ} 00' \times \text{base or } 2.050 \times 4 = 8.20$  chs which added to 54.50 chs. makes 62.70 To right bank Grand river.

Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for meander cor. of fract. secs. 16 & 17 marked on brass caps T 21 S R 25 E. on N. half, S 16 on E. half and MC S 17 on W. half, raise a mound of stone 2 ft. base,  $1\frac{1}{2}$  ft. high N. of cor.

Pit impracticable  
Ascend.

76.00 Base of rocky ridge, bears N.E. & N.W.  
78.85 Base of ledge. Point for sec. cor. will fall on ledge where corner cannot be set. mark cross for exact cor. point  
Set an iron post, 3 ft. long, 2 ins. in dia,

Subdivision of T. 21 S., R. 25 E.

chains

24 mis. in the ground for witness cor  
to secs. 8, 9, 16 & 17, marked on brass  
cap, top of sage representing north

T 21 S. R 25 E

S 8      S 9

w/c

S 17      S 16

raise a mound of stone, 2 ft. base,  $1\frac{1}{2}$   
ft. high W. of cor. Its impracticable

80.00 Point for cor. secs. 8, 9, 16 & 17, corner not set.

Land mountainous, with deep canyons  
draining NW. & West. Undergrowth  
sage brush, no grass soil, rocky  
very poor sub soil, rocky.

Find some cedar & Juniper

October 12, 1910

October 19: 1910

From witness cor. to secs. 8, 9, 16 & 17

589° 54' E., on a random line, bet. secs.  
9 & 16.

To pass impassable ledges. offset

589° 54' E., 4 chs. then

North 115 chs. to random line

10.70 Right bank of Grand river.

Set temporary meander corner.

To determine the distance across

river I set a flag on line on left  
bank, then measure a base S. 0° 06' W,  
2.50 chs. to a point from which flag

beams N. 61° 49' E. From the flag

the South end of the base beam

S. 61° 49' W., therefore tan 61° 43' x base  
or  $1.8585 \times 2.50 = 4.65$  which added

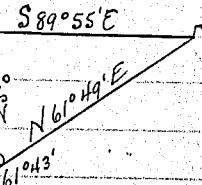
to 10.70 makes

To left bank Grand river set temporary  
meander cor.

15.35 Set temporary 1/4 sec. cor.

10.00 Intersect N & S. line 1/4 lks. S. of the

0.04



*chain* Subdivision of T. 21 S., R. 25 E.

cor. of secs. 9, 10, 15 + 16

The ice tree

West, on true line bet. secs. 9 + 16.

Over mountainous land thru forest  
of cedar & spruce.

Ascend rocky N.E. slope ridge

15.05 Narrow ridge, 150 ft. above sec. cor. brns  
 $7.20^{\circ}$  W. and  $S.20^{\circ}$  E.

Descend abruptly over ledges.

24.00 Base of ridge, brns  $7.20^{\circ}$  W. +  $S.20^{\circ}$  E.

Descend towards Grand river.

40.02 Set an iron post, 3 ft. long, 1 in. in dia.,  
26 ins. in the ground for  $\frac{1}{4}$  sec. cor.  
marked on brass cap  $\frac{1}{4}$  S 9 on N.  
half +  $S.16$  on S. half, raise a  
mound of stone 2 ft. base,  $1\frac{1}{2}$  ft. high  
N. of corner

Pit impracticable

54.00 Hollow, drains SW.

64.69 Left bank of Grand river  
Set an iron post, 3 ft. long, 1 in. in dia.,  
26 ins. in the ground and mound of  
stone for meander cor. of grand. secs  
9 + 16. marked on brass cap T 21 SR  
25 E S 9 MC on N half and  $S.16$  on  
S. half, raise a mound of stone 2 ft.  
base,  $1\frac{1}{2}$  ft. high E. of cor.

Pit impracticable

69.34 Right bank of Grand river

Set an iron post, 3 ft. long, 1 in. in  
dia., 26 ins. in the ground and  
mound of stone for meander cor.  
of grand. secs. 9 + 16 marked on brass  
cap T 21 SR 25 E S 9 on N. half and  
 $S.16$  MC on S. half, raise a mound  
of stone 2 ft. base,  $1\frac{1}{2}$  ft. high W.  
of corner

Pit impracticable

Ascend

Subdivision of T. 21 S.R. 25 E.

chain

- 76.04 Base of impassable ledge. Offset as follows.  
South 1.15 cha: then run on offset line West.
- 80.04 The witness cor. to secs. 8, 9, 16 & 17.  
Land mountainous, draining N. & SW., with NE. & SW. slopes. Under-growth short shadscale, some grass. Soil, gravelly & rocky, very poor. Sub-soil, rocky. Juniper, some cedar and piñon.

October 19, 1910

- October 24: 1910  
N. 0° 03' W., bet. secs. 8 & 9 from true corner point.
- 0.50 Top of rock spur, projects SE.  
Hence along east side ledges over land facing East.
- 35.00 Begin ascent of ledges.  
40.00 Point for  $\frac{1}{4}$  cor. on ledges, corner cannot be set.
- 42.10 On top of ledges & mesa, bears NE. and S. 10° W.  
Set an iron post, 3 ft. long, 1 in. in dia., 26 in. in the ground for witness cor. to the  $\frac{1}{4}$  sec. cor. marked on brass cap T 21 S R 25 E on N. half, S 9 on E. half & S 8 on W. half with W C  $\frac{1}{4}$  to the south, raise a mound of stone 2 ft. base,  $\frac{1}{2}$  ft. high W. of corner.  
Pits impracticable
- Ascend.
- 45.00 Low ridge, bears E. & W.  
Descend.
- 49.10 Wash, course W.  
Ascend 50 ft.
- 56.00 Ridge, bears E. & W.  
Descend abruptly

Subdivision of T. 21, S. R. 25 E.  
chains.

79.40	Wash, Course SW. Ascend.
80.00	Set an iron post, 3 ft. long, 2 in. in dia., 24 in. in the ground and mound of stone for cor. of secs. 4, 5, 8 & 9 marked on brass cap T 21 S 5 mi NW, R 25 E S 4 mi NE.. S 9 in SE. and S 8 in SW. quadrant, raise a mound of stone, 2 ft. base 1½ ft. high W. of cor. Pits impracticable land, mountainous drainage E & W. S. 42 chs. steep east slope to Grande river, N. 38 chs. west slope of mesa Undergrowth sage brush, no grass Soil, rocky, sub soil rocky, very poor. Timber scattering cedar & juniper
	October 24, 1910

October 25: At 8<sup>h</sup> 14<sup>m</sup> a.m. l. m. t.  
I set off 39° 0' 1" N. on the lat. arc; 11° 55' S. on the decl. arc; and determine  
a meridian with the solar at the cor  
of secs. 4, 5, 8 & 9.

Hence true

East, on a random line bet. secs. 4 & 9.

40.00 Set temporary ¼ sec. cor.

Intersect N. & S. line 5 lks. N. of the  
cor. of secs. 3, 4, 9 & 10.

Hence true

N. 89° 58' W., on true line, bet. secs. 4 & 9.  
Over rolling mesa top through forest  
of cedar & juniper.

40.05 Set an iron post, 3 ft. long, 1 in. in dia.,  
26 in. in the ground for ¼ sec. cor.  
Marked on brass cap ¼ S + 10 N. half  
and S. 9 on S. half, from which  
A cedar, 7 in. diam., bears N. 56° E

Subdivision of T. 21 S., R. 25 E.

-chans

108 lks. dist., marked

$\frac{1}{4} S 4 BT$

A cedar, 16 in. diam., bears S.  $28^{\circ}$  W.

53 lks. dist., marked

$\frac{1}{4} S 9 BT$

48.80 Wash, 10 lks. wide, coarse NW.

Gradually ascend

64.00 Spur, projects NW.  
descend.

77.90 Wash, coarse SW.

80.10 The cor. of secs. 4, 5, 8 + 9.

Land rolling, draining west. Under-growth, sage brush, some grass.

Soil, sandy surface, sub soil gravelly.

Bed rock about 4 ft. deep. Timber  
cedars few.

Knowing that closing corners are necessary on the north bdy. of the tp.  
Draw

N.  $0^{\circ} 03' W.$ , on true line bet. secs. 4 + 5  
over mountainous land thru forest of  
cedar + juniper.

Ascend

18.00 Ridge, bears E. & W.

descend

36.00 Low ridge, bears E. + W.

39.50 Wash, 10 lks. wide, coarse W.

40.00 Set an iron post, 3 ft. long, 1 in. in

dia, 26 in. in the ground for  $\frac{1}{4}$  sec.

cor. marked on brass cap  $\frac{1}{4} S 5$  on

W. half and S.  $4$  on E. half, raising a

mound of stone, 2 ft. base,  $1\frac{1}{2}$  ft. high

W. of corner

Pits impracticable

48.00 Ridge bears E. & W.

descend

58.50 Wash, coarse SW.

Ascend S. face of ridge.

81.12 Intersect 4<sup>th</sup> Standard Parallel South

Subdivision of T. 21 S. R. 25 E.

chains

10.70 chs. S.  $89^{\circ} 59' W.$ , of the standard cor. of secs. 32 & 33 heretofore described. Set an iron post, 3 ft. long, 2 in. in dia., 24 in. in the ground for closing cor. of secs. 4 & 5 marked on brass cap CCT 20 S R 25 E S 32 S 33 on N. half, S 4 in SE. and S 5 in SW. quadrant, dig pits  $24 \times 18 \times 12$  in. crosswise of each line, E. & W. 3 ft.; and S. of post 7 ft. dist., raise a mound of earth 4 ft. base, 2 ft. high, S. of cor. Land mountainous, draining west. Undergrowth sage brush, some good grass. Soil, sandy, 2<sup>nd</sup> rate. Sub-soil sandy, very dry. Timber, cedar & pines.

October 25: At this corner I set off  $11^{\circ} 58'$  S. on the decl. arc; and at  $11^{\text{h}} 44^{\text{m}}$  a.m. l. m. t. observe the sun on the meridian; the resulting lat is  $39^{\circ} 02'$ .

October 25-1910

October 7: At  $9^{\text{h}} 18^{\text{m}}$  a.m. l. m. t. I set off  $38^{\circ} 56'$  on the lat arc;  $5^{\circ} 18'$  S. on the decl. arc; and determine a meridian with the solar at the cor. of secs. 5, 6, 31 & 32 on the S. bdy of the tp. heretofore described.

Thence down

$7.0^{\circ} 03' W.$ , bet. secs. 31 & 32.

Over broken land, descending through scattering cedar & pines.

12.20	Wash, 50 eks. wide, 20 ft deep, course N.W.
35.00	Leave, mountainous land, bras N.E. & S.W.
40.00	Set an iron post, 3 ft. long, 1 in. in dia., 26 in. in the ground for $\frac{1}{4}$ sec. cor. marked on brass cap $\frac{1}{4}$ S 31 on W. half and S 32 on E. half,

Subdivision of T. 21 S., R. 25 E.

chains

	dig pits 18x18x12 ins. N. & S. of post 3 ft. dist., raise a mound of earth 3 1/2 ft. base, 1 1/2 ft. high W. of cor.
48.40	Old road, bears NE. + SW.
49.70	Granite wash, 50 lbs. wide, course W.
52.40	Road, bears E. + W.
65.00	Spur, projects SE. descend
70.80	wash, course SE.
80.00	At base of mesa + ledge, bears E. + W. Set a union post, 3 ft. long, 2 ins. in dia., 24 ins. in the ground for cor. of secs. 29, 30, 31 & 32, Marked on Brass Cap
	T 21 S S 30 in NW. R 25 E S 29 in NE., S 32 in SE. and S 31 in SW. quadrant, raise a mound of stones, 2 ft. base, 1 1/2 ft. high W. of corner. Pits impracticable Land mountainous rolling S 35 chs. mountainous land, NW. slope N 45 chs. rolling land S. slope. Undergrowth, shadscale, some grass, Soil, gravelly, rocky + clay, poor. Sub. soil, rocky. Lumber Some cedar + Juniper.

4.00	East on a random line bet. secs. 29 + 32 Base impassable ledges. Offset as follows South 7 chs: then, on the offset line East 36 chs.
4.00	North 7 chs to random line bet. secs. 29 + 32 Set temporary 1/4 sec. cor.
64.00	Edge of impassable ledges: Offset as follows South 3 chs: then, on the offset line East 16.04 chs, then
X	North 3 chs to the random line, on which, at

Subdivision of T. 21 S. R. 25 E.

chains

80.04	Intersect N. & S. line at the true cor. point of secs. 28, 29, 32 & 33.
	Theyee I run West. on true line bet secs. 29 & 32 over mountainous land along side of mesa. Edge of impassable ledges to pass which I offset as follows.
	South 3 chs.; then run on offset line West
16.04	Offset, N. 3 chs. to true line Ascend SE. slope of spur.
2000	Spur, projects SW. Descend
40.02	Set an iron post, 3 ft long, 1 in. in dia., 26 in. in the ground for $\frac{1}{4}$ sec. cor. marked on brass cap $\frac{1}{4} S 29$ on N. half and $S 32$ on S. half, raise a mound of stone 2 ft. base, $1\frac{1}{2}$ ft. high N. of cor. It's impracticable
40.04	Edge of impassable ledges, thence offset South 7 chs.; then run on offset line West
76.04	Offset N. 7 chs. to true line
80.04	The cor. of secs. 29, 30, 31 & 32. Land mountainous with S. slope. No undergrowth, no grass. Soil, rocky, very poor, sub-soil rocky. Juniper, cedar & piñon. October 7: At this sec. cor. I set off $5^{\circ} 22' S.$ on the decl. arc; and at $11^h 48^m$ a.m. l.m.t. observe the sun on the meridian; the resulting latitude is $38^{\circ} 51'$ .

October 8:

40.00	West. on a random line bet secs. 30 & 31. Set temporary $\frac{1}{4}$ sec. cor.
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Subdivision of T 21 S R 25 E

chains

- 77.60 Intersect the west boundary of the  
tp 5 lks. N. of the true cor. joint of  
secs. 25, 30, 31 & 36 heretofore described.  
Hence from  
 $77.89^{\circ} 58' E.$ , on true line, bet. secs. 30 & 31.  
Over mountainous land along  
S. face of ridge or mesa.
- 37.60 Set. an iron post, 3 ft. long, 1 m. in  
dia., 26 ins. in the ground for  
 $\frac{1}{4}$  sec. cor. marked on brass cap  
S 30 on N. half and S 31 on S.  
half, raise a mound of stone 2  
ft. base,  $1\frac{1}{2}$  ft. high, N. of cor.  
Pits impracticable  
Corner situated amongst boulders.  
The corner of secs. 29, 30, 31 & 32.  
Land, mountainous facing S.  
No undergrowth, no grass.  
Soil, rocky, very poor. sub-soil  
rocky, no timber

October 7: 1910

- 7.00 03' W., bet. secs. 29 & 30  
Over mountainous land.  
Ascend S. face of mesa over ledges  
Top of mesa + ridge, 200 ft. above  
sec. cor., bears East +  $3.85^{\circ} W.$   
Enter cedar s. grove
- 36.00 Low ridge, bears E. + W.  
Descent
- 40.00 Set. an iron post, 3 ft. long, 1 m. in  
dia., 26 ins. in the ground for  $\frac{1}{4}$   
sec. cor. marked on brass cap  
S 30 on W. half and S 29 on E.  
half, raise a mound of stone, 2  
ft. base,  $1\frac{1}{2}$  ft. high W. of corner.  
Pits impracticable
- 55.70 Wash, 25 lks. wide, coarse SW.  
Ascend.
- 52.00 Low ridge, bears E. + W.

chains

# Subdivision of T. 21 S. R. 25 E.

	Descend.
66.70	Wash, coarse SSW, ascend.
80.00	Set an iron post, 3 ft. long, 2 in. in dia., 24 in. in the ground for cor. of secs. 19, 20, 29 & 30 marked on brass cap T 21 S. 19 in NW, R 25 E. S 20 in NE, S 29 in SE and S 30 in SW quadrant, raise a mound of stone, 2 ft. base 1½ ft. high, N. of corner. Pits impracticable, Land mountainous S 16.25 chs. S face of mesa over ledges. N 63.75 chs. Mesa top draining west. Undergrowth, sage brush, some grass. Soil, rocky & sandy, very poor. Sub-soil sandy. Bed rock close to surface. Timber cedar & piñon.

	East, on a random line, bet. secs. 20 & 29
40.00	Set temporary $\frac{1}{4}$ sec. cor.
80.10	Intersect N. & S. line of like. S. of the cor. of secs. 20, 21, 28 & 29 Hence true S. 89° 57' W. on true line bet. secs. 20 & 29. Over rolling mesa, thru cedar & piñon Gradually descend.
40.05	Set an iron post, 3 ft. long, 1 in. in dia., 26 in. in the ground for $\frac{1}{4}$ sec. cor., marked on brass cap $\frac{1}{4}$ S 20 on N. half and S 29 on S. half, dig pit 18 x 18 x 12 in. E. - W. of post 3 ft. dist., raise a mound of earth 3 $\frac{1}{2}$ ft. base 1½ ft. high N. of cor.
68.70	Wash, coarse SW.
80.10	The cor. of secs. 29, 20, 29 & 30 Land rolling, draining west.

Subdivision of T. 21 S., R. 25 E.

chain

Undergrowth, sage brush, some grass. Soil sandy, good sub-soil sandy & gravelly. Timber, scrub cedar & Juniper.

October 7, 1910

October 8, 1910.

West, on a true line bet. secs. 19 & 30  
Gradually ascend over rolling mesa.

8.00 Ridge bears N.E. & S.W.

descend towards Grand river.

38.20 Edge of high rock wall over Grand river, bears  $N. 20^{\circ} E.$  &  $S. 30^{\circ} W.$

Point for  $\frac{1}{4}$  sec. cor. will fall on ledges, therefore

Set an iron post, 3 ft. long, 1 in. in dia., 26 in. in a mound of earth & stone for witness corner. to the  $\frac{1}{4}$  sec. cor. marked on brass cap T-  
21 S, R. 25 E S 19 on N. half and S 30  
on S half, with W C  $\frac{1}{4}$  to the W.  
from which

A pinon, 16 in. diam., bears  $N. 59^{\circ} E.$ .

34.3 lks. dist., marked

W C  $\frac{1}{4}$  S 19 BT

A pinon, 8 in. diam., bears  $S. 27\frac{1}{2}^{\circ} W$

62 lks. dist., marked

40.00 Point in  $\frac{1}{4}$  sec. cor. - can not set

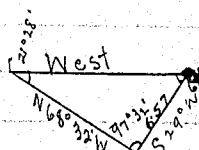
To determine distance down ledges,  
I set a flag on line west on spur,  
then measure a base  $S. 29^{\circ} W$  6.57 chs.  
to a point from which flag bears  
 $N. 68^{\circ} 32' W$ . From the flag the S end  
of my base bears  $S. 68^{\circ} 32' E.$ ; by  
separate measurements of each angle  
they are found respectively to be.

$61^{\circ}$ ,  $97^{\circ} 32'$  and  $21^{\circ} 28'$ . Therefore

$$\frac{\sin 97^{\circ} 32'}{\sin 21^{\circ} 28'} \times \text{base or } \frac{991 \times 0.57}{3.66} = 17.80$$

chs.; also,  $38.20 + 17.80 =$

56.00 To spur projects  $N. 250$  ft. below top



Subdivision of T. 21 S. R. 25 E.

chain

Continue to descend.

- 71.81 Left bank of Grand river.  
Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for meander cor of sec. 19 & 30 marked on brass cap T 21 S R 25 E S 19 M C on N. half and S. 30 on S half, raise a mound of stone 2 ft. base,  $1\frac{1}{2}$  ft. high, E. of cor.

Pit impracticable

Land mountainous draining SW.  
Undergrowth, sage brush, no grass  
Soil, rocky and sandy, sub-soil  
sandy, poor. Juniper, cedar and  
fir.

October 13: At 8<sup>h</sup> 16<sup>m</sup> a.m. l. m. t  
I set off  $38^{\circ} 58'$  on the lat. arc.

$7^{\circ} 34'$  S. on the decl. arc and determine a meridian with the solar  
of the cor. of secs. 19, 20, 29 & 30  
Hence from

$7.0^{\circ} 03' W.$ , bet. secs. 19 & 20

Over mountainous land, through  
forest of cedar & fir.

9.00 Ridge, brass E. & W. descend.

16.80 Wash, course West Ascend

25.60 Ridge, brass E. & W.

32.15 On high ledge over Grand river  
brass N. & SW. Point for  $\frac{1}{4}$  sec. cor.  
will fall on inaccessible NW. slope  
Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for  
witness corner to the  $\frac{1}{4}$  sec. cor.  
marked on brass cap T 21 S R 25 E.

on N. half, S. 20 on E. half and  
S. 19 on W. half, with WC  $\frac{1}{4}$  to the  
North, raise a mound of stone, 2  
ft. base,  $1\frac{1}{2}$  ft. high, W. of corner.  
Pit impracticable

40.00 Point for  $\frac{1}{4}$  sec. cor not set

Subdivision of T. 21 S. R. 25 E.

chains:

To determine the distance down ledges, I set a flag on line on left bank of Grand river, and also erect a signal at my station at the witness cor to the  $\frac{1}{4}$  cor.

From my flag at base of mesa + Grande river, measure a base.

$N 89^{\circ} 57' E$ , 12.00 chs. to a point from which, flag bears  $S 24^{\circ} 37' W$ .

From the  $\frac{1}{4}$  cor. the east end of base bears  $N. 24^{\circ} 37' E$ ; therefore tan  $65^{\circ} 20' \times$  base or  $2.177 \times 12 = 26.12$  chs which added to 32.15 makes

to left bank of Grand river, 57.5 ft. below top.

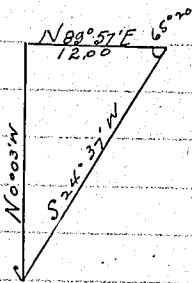
Set an iron post, 3 ft. long, 1 m. in dia., 26 ins. in the ground and mound of stone for meander cor. of frac. secs. 19 & 20, marked on brass cap T 21 S R 25 E. on N. half, MC S 20 on E. half and S 19 on W. half, raise a mound of stone, 2 ft. base,  $1\frac{1}{2}$  ft. high. N. of corner.

Pit impracticable

To determine distance across river I set a flag on right bank, then measure a base,  $N 89^{\circ} 57' E$ , 5.10 chs. to a point from which flag, bears  $N 26^{\circ} 50' W$ . From the flag the east end of base, bears  $S 26^{\circ} 50' E$ ; therefore tan  $63^{\circ} 13' \times$  base or  $1.98 \times 5.10 = 10.10$  chs which added to 58.27 makes

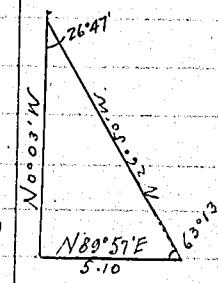
to right bank of Grand river.

Set an iron post, 3 ft. long, 1 m. in dia., 26 ins. in the ground for meander cor. of frac. secs. 19 & 20, marked on brass cap T 21 S R 25 E. on N. half, S 20 on E. half and MC S 19 on W. half, raise a mound of stone, 2 ft. base,  $1\frac{1}{2}$  ft. high. N. of cor.



58.27

68.37



chain

# Subdivision of T 21 S. R. 25 E.

	Pit impracticable Gradually ascend.
80.00	Set an iron post, 3 ft. long, 2 in. in dia., 24 in. in the ground for cor. of secs. 17, 18, 19 + 20, marked on brass cap T 21 S S 18 mi NW., R 25 E S 17 mi NE., S 20 mi SE. and S 19 mi SW. quadrant, raise a mound of stone, 2 ft. base, 1 1/2 ft. high, W. of cor.
	Pits impracticable land Mountainous draining SW. Steep, NW & SE slopes. No undergrowth, no grass. Soil rocky, very poor. Sub- soil sandy & rocky. Timber some cedar & pines.
	October 13: At this sec. cor. I set off $7^{\circ}38'$ S. on the decl. side, and at $11^{\text{h}} 46^{\text{m}}$ a.m. l.m.t. observe the sun on the meridian the resulting lat. is $38^{\circ}59'$
	$7.89^{\circ}57' E.$ , on a random line bet. secs. 17 + 20.
6.43	Right bank of Grand River, Set temporary meander cor. To determine the distance across river, set flag on line on left bank, then measure a base $7.0^{\circ}03' W.$ , 5.10 chs. to a point, from which flag bears $S.45^{\circ}33'E.$ : From the flag the north end of base bears $N.45^{\circ}33'W.$ , there fore tan $45^{\circ}30' \times$ base or $5.10 \times 1.017$ $= 5.19$ chs. which added to 643 makes to left bank Grand river. Set temporary meander cor.
4.00	Set temporary 1/4 sec. cor.
80.16	Intersect N. + S. line of lots. N. of the cor. of secs. 16, 17 + 20 + 21.

Subdivision of T. 21 S. R. 25 E.

chain

Hence from

West, on true line, bet. secs. 17 & 20

Over mountainous land, through  
scattering cedar & juniper.

Descend into canyon.

8.00 Wash in canyon, 40 ft. wide, course N.W.

Ascend from canyon over ledges.

17.50 Top canyon wall, 250 ft. above base.  
Bears N.W. & S.

22.00 Top of ascent and ridge, bears N. & S.  
Gradually descend.

40.08 Set an iron post, 3 ft. long, 1 in. in  
dia., 26 in. in the ground for  $\frac{1}{4}$   
sec. cor. marked on brass cap  $\frac{1}{4}$  S  
17 on N. half and S 20 on S. half,  
raise a mound of stone 2 ft. base  
 $\frac{1}{2}$  ft. high N. of cor.

Pits impracticable.

46.57 Begin descent over ledges into  
Grand river canyon.

68.54 To left bank of Grand river, set  
an iron post, 3 ft. long, 1 in. in dia.,  
26 in. in a mound of earth & stone  
for meander cor. of frd. secs.

17 & 20 marked on brass cap

T 21 S R 25 E S 17 M C on N. half and  
S 20 on S. half, raise a mound  
of stone, 2 ft. base,  $\frac{1}{2}$  ft. high E. of  
cor.

Pit impracticable.

93.73 To right bank of Grand river, set  
an iron post, 3 ft. long, 1 in. in  
dia., 26 in. in the ground for  
meander cor. of frd. secs. 17 & 20

marked on brass cap T 21 S R 25  
E S 17 on N. half and M.C. S 20  
on S. half, raise a mound of  
stone, 2 ft. base,  $\frac{1}{2}$  ft. high, W.  
of cor.

chains

# Subdivision of T. 21 S. R. 25 E.

Pit impracticable  
Gradually ascend.

- 80.16 The cor. of secs. 17, 18, 19 & 20.  
Land, mountainous draining N.,  
E. & W. Undergrowth, some sage  
brush, no grass. Soil rocky, sub-  
soil, rocky & gravelly, very poor  
Timber, scrub cedar & pinon.

October 13, 1910

October 24:

West, on a random line, bet. secs. 18 & 19.

40.00 Set temporary  $\frac{1}{4}$  sec. cor.

77.16 Intersect W. bdy. of the 7th. 5 lots.  
S. of the cor. of secs. 13, 18, 19 & 24  
heretofore described

Hence Green

S $89^{\circ}58' E.$ , on true line bet. secs. 18 & 19

Over rolling land ascending through  
cedar & pinon.

37.16 Set an iron post, 3 ft. long, 1 in. m.  
dia., 26 in. in the ground, for  $\frac{1}{4}$   
sec. cor. marked on brass cap  $\frac{1}{4}$   
S 18 on N. half and S 19 on S. half,  
dig pits  $18 \times 18 \times 12$  in. E. & W. of post  
3 ft. dist., raise a mound of earth  
3 $\frac{1}{2}$  ft. base,  $1\frac{1}{2}$  ft. high N. of cor.

54.50 Ridge, bears N.E. & S.W.

64.40 To edge of mesa, bears N $30^{\circ}W.$  & S $30^{\circ}W.$   
Descend abruptly 300 ft.

77.16 The cor. secs. 17, 18, 19 & 20.

Land rolling & mountainous  
W 54.50 chs. W. slope rolling land.  
Undergrowth, sage brush, some  
good grass. Soil, sandy loam, good,  
sub-soil gravelly & sandy, dry.  
Timber cedar & pinon. E. 22.66 chs.  
Steep rocky E. slope. Soil rocks.  
Sub soil rocks. No undergrowth,  
no grass. No timber.

Subdivision of T. 21 S., R. 25 E.

chain

- 7.0°03' W. bet. secs. 17 + 18.  
over mountainous land.  
Ascend rocky land facing SE.  
22.25 Ridge and top of mesa, 300 ft  
above sec. cor. bears NE. + SW.  
29.00 Ridge, bears E. + SW.  
Hence over land facing W.  
40.00 Set an iron post, 3 ft. long, 1 in. in  
dia., 26 in. in the ground for 1/4 sec.  
cor. marked on brass cap  $\frac{1}{4} S 18$  on  
W. half and  $S 17$  on E. half, from which  
a cedar, 12 in. diam., bears  $N. 60\frac{3}{4}^{\circ}$  E.,  
89 lks. dist., marked  
 $\frac{1}{4} S 17$  BT  
A cedar, 18 in. diam., bears  $S. 31\frac{1}{2}^{\circ}$  W.,  
54 lks. dist., marked  
 $\frac{1}{4} S 18$  BT.  
51.00 Low ridge, bears  $N. 85^{\circ}$  W. + E.  
Gradually descended.  
65.45 Begin steep descent from mesa.  
67.85 Ledge, 75 ft. high, bears NW. + SE.  
74.20 Wash, course E.  
Hence over open land sloping E.  
80.00 Set an iron post, 3 ft. long, 2 in. in  
dia. 24 in. in the ground for cor.  
of secs. 7, 8, 17 + 18, marked on brass  
cap  
 T 21 S 37 in NW,  
 R 25 E S 8 in NE,  
 S 17 in SE. and  
 S 18 in SW quadrant,  
 dig pits  $18 \times 18 \times 12$  in. in each sec.,  
 5  $\frac{1}{2}$  ft. dist., raise a mound of  
 earth 4 ft. base, 2 ft. high W. of corner.  
 Land mountainous with SE. W. +  
 NE. slopes. Undergrowth sage  
 brush. Some good bunch grass.  
 Soil sandy + rocky, poor. sub-soil  
 sandy. Bed rock about 3 ft. from  
 surface. Timber, some cedar + pinyon.

Subdivision of T. 21 S., R. 25 E.  
chain.

October 20: At this sec. cor. I set off  $10^{\circ} 13' S.$  on the decl. arc; and at  $11^{\text{h}} 45^{\text{m}}$  a. m. l. m. t. observe the sun on the meridian; the resulting latitude is  $39^{\circ} 00'$

East, on a random line, bet. secs.  
 $8 \frac{1}{2}$  & 17.

- 40.00 Set temporary  $\frac{1}{4}$  cor. /  
80.16 Intersect N. & S. line 3 lks. S. of  
the true cor. point of secs. 8, 9, 16 & 17

Thence, from

$S 89^{\circ} 59' W.$ , on true line bet. secs. 8 & 17

over mountainous land.

Descend from rocky spur.

- 14.45 Wash, course S.

Ascend 75 ft.

- 22.15 Spur, projects S.

Descend

- 29.55 Wash in Trail canyon, 20 lks. wide,  
course S.

Ascend over ledges.

- 36.06 Tops of ledges, bears N. & S.

- 40.08 Point for  $\frac{1}{4}$  cor. falls on sand-  
stone ledge. Where cor. cannot be set

- 42.06 Set an iron post, 3 ft. long, 1 in. mi-  
dia., 26 lbs. in the ground for  
witness cor. to the  $\frac{1}{4}$  sec. cor. marked  
on brass cap T 21 S R 25 E S 8 on  
N. half, + S 17 on S. half, with WC  
 $\frac{1}{4}$  to the east, raise a mound  
of stone, 2 ft. base,  $1\frac{1}{2}$  ft. high N.  
of corner

Descend abruptly

- 47.75 Wash in canyon, course SE.

Ascend over ledges

- 54.15 Spur, 200 ft. above canyon, projects  
N.

Descend

Subdivision of T. 21 S., R. 25 E.

chain:

- 68.55 Same wash, in canyon, course  $77.80^{\circ} E$ .  
Ascend
- 72.25 Spur, projects S.  
Descend ledge, 50 ft. high.
- 75.55 Same wash, course SE.
- 75.85 Ledge, 75 ft. high, bears N. + SE.
- 76.00 Top of ledge  
Gradually ascend
- 80.16 The cor. of secs. 7, 8, 17 & 18.  
Land mountainous, draining S.  
Undergrowth Chadscale, no grass.  
Soil, gray rocky sub soil, sandy  
& rocky, poor. Umbra, a few scat-  
tering cedar & juniper.

October 24, 1910

October 26: At 7 h. 47 m. a.m. l.m.t.  
I set off  $38^{\circ} 59.7^{\circ}$  on the lat. arc:  
 $12^{\circ} 14.7^{\circ}$  S. on the decl. arc; and  
determine a meridian with the  
solar at the cor. of secs. 7, 8, 17 &  
18.

Hence true

$77.89^{\circ} 58' W.$ , on a random line,  
bet. secs. 7 & 18

40.00 Set temporary  $\frac{1}{4}$  sec. cor.

75.85 Intersect, W. bdy. of the tp. 63 lks.  
S. of the cor. of secs. 7, 12, 13 & 18  
heretofore described.

Set an iron post, 3 ft. long, 2 ins. in  
dia., 24 ins. in the ground for  
closing cor. of secs. 7 & 18, marked  
on brass cap.

CCR 24 E S 12 S 13 in W. half,  
T 21 S. on N. half,

S 7 in NE and

R 25 E S 18 in SE quadrant,  
dig pits  $24 \times 18 \times 12$  ins. crosswise  
on each line, N. + S. 3 ft., and E.  
of post 7 ft. dist., raise a mound

Subdivision of T. 21 S.R. & 5 E.  
chain.

of earth 4 ft. base, 2 ft. high E of  
cor.

Hence from

S $89^{\circ}58' E$ , on true line bet. secs 7 & 18.

Gradually ascend through scatter-  
ing cedar & pinon.

35.85 Set an iron post, 3 ft. long, 1 in. in  
dia., 26 in. in the ground for  $\frac{1}{4}$   
sec. cor. marked on brass cap  $\frac{1}{4}$   
S 7 on N. half and S 18 on S. half.  
from which

A cedar, quis. diam., bears N.  $12\frac{1}{2}' E$ ,  
32 lks. dist., marked  
 $\frac{1}{4} S 7 BT$

A cedar, 16 in. diam., bears S.  $39^{\circ} W$ ,  
110 lks. dist., marked  
 $\frac{1}{4} S 18 BT$

56.85 Ridge, bears N. & SE.

Descend.

66.65 Base of ridge, bears N. & SE. Leave  
cedar & pinon.

Descend.

75.85 The cor. of secs. 7, 8, 17 & 18.

Land rolling & mountainous  
W 57 chs. W slope rolling land.  
Undergrowth, some sage brush  
No grass. Soil, gravelly, sub-  
soil sandy, poor. Bed rock at  
about 3 ft. E 19 chs. E slope  
rocky land. No undergrowth,  
good grass. Soil sandy & rocky  
Sub soil, rocky. Timber, cedar  
& pinon on 66.65 chs.

N.  $0^{\circ}0' W$ , bet. secs. 7 & 8.

Over land sloping East.

8.50 Wash, course E.

Ascend 100 ft

low ridges E. & W

Gradually descend.

20.35

Subdivision of T. 21 S., R. 25 E.

chain

37.90	Wash, near head of Trail Canyon, Course East.
40.00	Enter cedar + piñon. Ascend Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground for $\frac{1}{4}$ sec. cor. marked on brass cap $\frac{1}{4}$ S 7 on W. half, and S 8 on E. half, raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high, W. of cor. Pits impracticable
45.90	Slip road, bears N. $60^\circ$ E. + SW.
59.00	Ridge, bears NE. + SW Descend
78.40	Road, bears E. + W.
80.00	Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in the ground for cor. of secs. 5, 6, 7 + 8 marked on brass cap T 21 S S 6 in NW, R 25 E S 5 in NE, S 8 in SE. and S 7 in SW. quadrant, dig pits $18 \times 18 \times 12$ ins. in each sec. $5\frac{1}{4}$ ft. dist., raise a mound of earth 4 ft base, 2 ft. high, W. of cor. Land. hilly, draining W. + SE. Soil sandy + gravelly. poor. sub-soil, rocky. Some undergrowth of sage brush, no grass. Timber cedar + piñon.

N.  $89^\circ 59'$  E., on a random line bet. secs.  
5 + 8

40.00	Set temporary $\frac{1}{4}$ sec. cor.
80.00	Intersect N. 0 S. line 1/4 lks. N. of the cor. of secs. 4, 5, 8 + 9. Hence from N. $89^\circ 55'$ W., on a true line bet. secs. 5 + 8 over hilly land.
	Ascend.

Subdivision of T.21 S. R.25 E.	
chains.	
0.25	Wash, course S.
33.00	Ridge, bears N.E. + S.W. Gradually descend.
40.02	Set an iron post, 3 ft. long, 1 in. in dia. 2.6 ms. in the ground, for $\frac{1}{4}$ sec. cor. marked on brass cap $\frac{1}{4}$ S. 5 on N. and S. 8 on S. half, dig pits $18 \times 18 \times$ 12 ms. E. + W. of post, 3 ft. deep, raise a mound of earth $3\frac{1}{2}$ ft. base $1\frac{1}{2}$ ft. high N. of cor.
69.00	Old road, bears N.E. + S.W.
80.04	The cor. of secs. 5, 6, 7 + 8. Land hilly. E. 33. chs. SE slope. W 47 chs. NW slope. Undergrowth sage brush, some grass. Soil, poor, sandy + rocky. Sub-soil rocky. Bed rock about 4 ft. deep. Lumber some scattering cedar + juniper October 26: At this sec. cor. I set off $12^{\circ} 19'$ S. on the decl. arc; and at $11^{\text{h}} 44^{\text{m}}$ a.m. l.m. t. observe the sun on the meridian; the resulting lat. is. $39^{\circ} 01'$
$N 89^{\circ} 58' W$ , on a random line bet. secs. 6 + 7	
40.00	Set temporary $\frac{1}{4}$ sec. cor.
75.68	Intersect W. bdy. of the tp. 1.14 chs. South of the cor. of secs. 6, 7 + 12 heretofore described Set an iron post, 3 ft. long, 2 ms. in dia., 2.4 ms. in the ground for closing cor. of secs. 6 + 7 marked on brass cap
T 21 S on N half, CC S 1 S 12 R 24 E on W. half, S 6 in NE and S 7 R 25 E in SE quadrant. raise a mound of stone, 2 ft. base $1\frac{1}{2}$ ft. high E. of corner.	

Subdivision of T. 21 S., R. 25 E.

Chavis.

- Pits impracticable  
Thence S. run  
S.  $89^{\circ} 58' E.$ , on true line bet. secs. 6 & 7  
Gradually ascend over rolling land  
35.68 Set an iron post, 3 ft. long, 1 in. in  
dia., 26 ins. in the ground for  
 $\frac{1}{4}$  sec. cor. marked on brass  
cap  $\frac{1}{4}$  S 6 on N. half and S 7  
on S. half, dig pits  $18 \times 18 \times 12$  ins.  
E. & W. of post 3 ft. dist., raise  
a mound of earth  $3\frac{1}{2}$  ft. base  
 $1\frac{1}{2}$  ft. high N. of corner.  
55.10 Wash, 20 lks. wide, course NW.  
74.23 Old road, bears NW. & SE.  
75.68 The cor. of secs. 5, 6, 7 & 8.  
Land rolling with NW. slope.  
Abundant sage brush. Some  
grass. Soil, rich sandy loam +  
gravelly sub soil sandy loam +  
gravelly. Timber, a few cedar and  
firons.

- N.  $0^{\circ} 03' W.$ , bet. secs. 5 & 6.  
Over hilly land descending  
through forest of cedar & firons.  
39.00 Descend into Gulch.  
40.00 Set an iron post, 3 ft. long, 1 in. in  
dia., 26 ins. in the ground and  
mound of stone for  $\frac{1}{4}$  sec. cor.  
marked on brass cap  $\frac{1}{4}$  S 6 on  
W. half and S 5 on E. half,  
raise a mound of stone, 2 ft.  
base,  $1\frac{1}{2}$  ft. high. W. of cor.  
Pits impracticable  
40.60 Gulch, drains N.  $80^{\circ} W.$   
Ascend.  
45.00 Ridge, bears E. & W.  
descend  
48.40 Wash, course S.  $80^{\circ} W.$   
Ascend.

Subdivision of T 21 S., R 25 E.

Chamis

- 56.00 Ridge, bears E. & W.  
Descend abruptly  
63.30 Wash, course S.  $80^{\circ}$  W.  
Ascend  
77.00 Ridge, bears N.E. & SW.  
Descend into canyon.  
80.95 Intersect N. bdy. of the tps. 10.76 chs.  
S.  $89^{\circ} 59'$  W. of the standard cor. of  
secs. 31 & 32. Heretofore described  
Rebar iron post, 3 ft. long, 2 in.  
in dia., 24 in. in the ground for  
closing cor. of secs. 5 & 6, marked  
on brass cap
- CC T 20 S R 25 E S 31 S 32 on N. half  
S. 5 in. SE. and  
S. 6 in. SW. quadrant.  
dig pits 24 x 18 x 12 in. crosswise  
on each line E. & W. 3 ft. and S.  
of post. 7 ft. dist., raise a mound  
of earth 4 ft. base, 2 ft. high, S. of  
cor.  
Land mountainous, draining Creek  
with N. & S. slopes. of ridges. Moderate  
growth sage brush. some good  
bunch grass. Soil <sup>poor</sup> sandy & rocky.  
but soil rocky. bed rock close to  
surface.  
Timber scattering cedar and juniper

October 26-1910

Meanders, T 21 S R 25 E.

chains

Meanders of left bank of Grand river, down stream.  
I commence at the meander cor. of fract. sec. 34 on the N. bdy of the tp. heretofore described October 20: For solar observation see line br. secs. 9+10 page 42  
Hence I run with meanders in sec. 3.

over rocky bank.

S.  $44^{\circ}$  W. 18.30 chs: At 9 chs. mouth of Little Dolores river, 1 ch. wide course NW.

S.  $5\frac{1}{2}^{\circ}$  E. 4.70 chs.

S.  $56\frac{1}{4}^{\circ}$  E. 3.60 "

S.  $69\frac{1}{2}^{\circ}$  E. 3.30 "

S.  $51^{\circ}$  E. 19.40 "

S.  $41\frac{1}{2}^{\circ}$  E., 4.60 "

S.  $74\frac{1}{2}^{\circ}$  E., 6.40 "

S.  $33\frac{1}{2}^{\circ}$  E. 9.00 "

S.  $48\frac{1}{4}^{\circ}$  E. 3.10 "

S.  $54\frac{1}{2}^{\circ}$  E. 9.70 "

S.  $25^{\circ}$  E. 9.80 "

S.  $20^{\circ} 58'$  W. 20.87 " At 12.00 chs.

mouth of Marble canyon, 1 ch. wide course NW.

To meander cor.  
fract. sees. 3+10

Hence in see. 10

I am unable to follow river on account of ledges. I run on offset line on top of ledges.

S.  $44^{\circ} 45'$  W. 23.00 chs. At 17 chs. river is N. 4 chs and 200 ft. below.  
At 23. chs. river is N 3.50 chs.

chains

# Meadows, T. 21 S., R. 25 E.

S.  $39^{\circ} 47' W.$ , 44.01 chs. At 3 chs. mouth  
of canyon, 50 lbs wide course NW  
at 30 chs. river is N. 2.50 chs.  
+ 175 ft. below  
to witness cor  
meander cor.  
frac. secs. 9 + 10

October sketch before described

Rand, broken

Soil, rocky.

No timber, no undergrowth

No grass.

October 20, 1910

October 21: At  $7^h 45^m$  a.m. l.m.t  
I set off  $39^{\circ} 01' N.$  on the lat. arc;  
 $10^{\circ} 30' S.$  on the decl. arc; and  
determine a meridian with the  
solar at the witness cor. to the  
meander cor. frac. secs. 9 + 10

Hence I run on offset line with  
meanders in sec. 9.

Along top of high canyon & ledges  
over river

N.  $82\frac{3}{4}' W.$  18.50 chs. At 18 chs. river is  
at 10 chs. mouth <sup>25 ft. wide</sup> cor. N.

N. 8 chs. + 200 ft. below.

N.  $68\frac{3}{4}' W.$  17.40 chs. At 17 chs. river is  
N. 5 chs. + 200 ft. below.

N.  $88\frac{1}{4}' W.$  16.60 chs. At 16 chs. river is N.  
5 chs. + 200 ft. below.

S.  $88^{\circ} 45' W.$  12.50 chs. At 12 chs. river is N.  
5 chs. + 150 ft. below.

S.  $65^{\circ} W.$  6.10 chs. At 6 chs. river is N.  
4.50 chs. + 100 ft. below.

S.  $17\frac{1}{2}' W.$  9.70 chs. At 7.20 chs. Such  
50 lbs. wide, course  
west. At 9.70 chs.  
river is west 4 chs.

Meanders, T. 21 S. R. 25 E.

chain

S.  $1\frac{3}{4}^{\circ}$  E., 10.80 chs. At 5.20 chs. Gulch  
 15 lks. wide course W.  
 at 10.80 river is west  
 2 chs.

S.  $9^{\circ}$  E., 10.70 River is west 1 chs.  
 S.  $43^{\circ} 24'$  E., 7.87 chs. To meander cor.  
 fract. secs. 9 + 16.

Land broken.

Soil, rocky;  $4^{\frac{1}{2}}$  rate.

No timber, no undergrowth  
 no grass

Hence in Sec. 16.

over broken land along top of ledges.

S.  $56\frac{3}{4}^{\circ}$  E., 7.50 chs. At 7 chs. Hollow at  
 mouth 25 lks. wide  
 course SW. The river  
 is west, 3 chs.

S.  $8^{\circ}$  E. 13.30 chs. At 8 chs. river is west  
 $1\frac{1}{2}$  chs.

At 13.30 river is west  
 $3\frac{1}{2}$  chs.

S.  $41\frac{1}{2}^{\circ}$  W. 17.00 chs. At 5 chs. river is  
 $74\frac{1}{2}^{\circ}$  W. 2 chs.  
 At 12 chs. mouth of  
 Star Canyon, 1 ch  
 wide course NW.  
 At 17 chs. river is  
 N 6 chs.

N.  $69^{\circ} 01'$  W., 13.02 chs. At 5 chs. river is  
 north 3 chs.

To meander cor  
 fract. secs 16 + 17

Land broken.

Soil, rocky;  $4^{\frac{1}{2}}$  rate. Very poor.

Some cedar & pinon.

No undergrowth, no grass

Hence in Sec. 17.

On top of rocky bank

Meanders T 21 S R 25 E.

chains

- N.  $84^{\circ}$  W. 21.25 chs. At 21 chs. river is  
N. 2 chs. & 175 ft. below.
- S.  $79\frac{1}{2}^{\circ}$  W. 12.80 chs. At 10.80 chs. canyon  
at mouth, 1 ch. wide  
Course N.  $20^{\circ}$  W. at  
12.80 chs. river is N.  
3 chs.
- S.  $87^{\circ}$  W. 3.80 chs. At 3.80 chs. river is  
N. 3 chs.
- S.  $63\frac{1}{2}^{\circ}$  W. 9.75 " At 9.00 river is NW.  
2.50 chs.
- S.  $54^{\circ}$  W. 9.30 " At 9.00 river is N.  $36^{\circ}$  W.  
2.00 chs.
- S.  $27^{\circ}$  W. 6.50 " At 6.50 chs. river is  
West 2 chs.
- S  $20^{\circ}$  W. 16.30 " At 16 chs. river is  
West 2 chs.
- S  $14^{\circ}$  W. 1.300 " At 1.3 chs. river is  
West 2.75 chs
- S  $16^{\circ}$  W. 11.21 " To meander cor.  
frac. sec. 17 + 20

Land, broken.

Soil rocky  $\frac{1}{4}$   $\frac{1}{2}$  rate

No timber or undergrowth

October 21: At this cor. I set off  
10° 34'.6 S. on the decl. arc: and at  
11<sup>h</sup> 44<sup>m</sup>. a. m. l. m. t. observe the  
sun on the meridian; the resulting  
lat. is  $38^{\circ} 59'$ .

Hence in sec. 20.

Open rocky bank.

S  $7^{\circ}$  W. 7.50 chs.

S  $32^{\circ}$  W. 12.00 chs.

S  $45\frac{3}{4}^{\circ}$  W. 6.04 chs. To meander cor.  
frac sec. 19 + 20

Land, rolling

Soil, rocky,  $\frac{1}{4}$   $\frac{1}{2}$  rate

No timber, no undergrowth

Meanders, T 21 S, R 25 E.

chains

Hence in sec. 29

over rocky bank

S.  $61\frac{1}{4}^{\circ}$  W. 11.90 chs.

S.  $47^{\circ}$  W. 12.00 "

S.  $56^{\circ}$  W. 9.00 "

S.  $48^{\circ}$  W. 3.00 "

S.  $43^{\circ}$  W. 10.10 "

S.  $53^{\circ} 47' W.$  20.02 " To meander cor.  
frac. secs. 19 & 30.

Land, level

soil, rocky 4<sup>th</sup> rate.

No timber

No Undergrowth.

October 21- 1910

October 8.

Hence in sec. 30.

over level land through willow  
undergrowth

S.  $76^{\circ} 55' W.$  5.85 chs. To meander  
cor. frac secs. 25 & 30 on the W Bog  
of the tp.

Land level.

Soil, rocky & sandy, 4<sup>th</sup> rate

No timber

October 8, 1910

Meanders, T. 21. S.R. 25 E.

chains.

Meanders of the right bank of Grand river.

I commence at the meander cor. of fract. sec. 33. on the N. bdy. of the sp., heretofore described October 25. For solar observation see line bcb secs. 4+5.

Hence I run with meanders in sec. 3.

Over rocky bank.

S  $37^{\circ} 02' W.$ , 9.01 chs. To meander cor. fract. secs. 3+4

Land level

Soil, rocky, 4<sup>th</sup> rate

No timber

No undergrowth

---

Hence in sec. 4: over level land.

S  $40^{\circ} 25' W.$  5.10 chs.

S  $24^{\circ} 15' W.$  6.20 chs.

S  $32^{\circ} E.$  5.60 chs.

S  $64^{\circ} 00' E.$  3.00 chs. To meander cor. fract. secs. 3+4

Land, level

Soil, rocky; 4<sup>th</sup> rate

No timber

---

Hence in sec. 3.

over level land.

S  $63\frac{1}{2}^{\circ} E.$  4.60 chs.

S  $51\frac{1}{2}^{\circ} E.$  9.50 chs.

S  $61\frac{1}{2}^{\circ} E.$  8.10 "

S  $52\frac{1}{2}^{\circ} E.$  9.00 "

S  $55^{\circ} E.$  7.20 "

S  $38\frac{1}{2}^{\circ} E.$  9.00 "

S  $60^{\circ} E.$  8.30 "

S  $30^{\circ} E.$  5.00 "

S  $11\frac{3}{4}^{\circ} W.$  6.00 "

S  $29^{\circ} W.$  11.00 "

S  $38^{\circ} 16' W.$  7.52 " To meander

Meanders, T 21 S., R 25 E.

chains

Land, level.

cor. fract. secs. 3 & 10

Soil, rocky;  $\frac{4}{4}$  rate.

No timber

Undergrowth, a few willows.

October 25, 1910

October 27: At 7<sup>h</sup> 44<sup>m</sup>. a.m. l.m.t.  
I set off 39° 01' on the lat. arc; 12° 35' S.  
on the decl. arc; and determine  
a meridian with the solar at the  
meander cor. fract. secs. 3 & 10.  
Hence I run with meanders in  
sec. 10.

Over rocky bank, over boulders +  
small ledges.

S. 5 1/2° W. 10.00 chs.

S. 42 3/4° W. 12.50 chs.

S. 33° W. 19.50 "

S. 47° W. 8.50 "

S. 85° 02' W. 2.82 " To meander cor.  
fract. secs 9 & 10.

Land, broken.

Soil, rocks;  $\frac{4}{4}$  rate.

No timber

Hence in sec. 9

Over rocky bank.

N. 78° W. 10.20 chs.

N. 74 3/4° W. 16.00 chs.

N. 80 1/2° W. 17.80 chs.

S. 83 1/2° W. 12.00 chs.

S. 74° W. 11.50 "

S. 59 3/4° W. 7.70 "

S. 40 1/4° W. 4.30 "

S. 13 1/2° W. 9.40 "

S. 1° 47' W. 9.40 "

S. 6° E. 7.00 "

S. 16° E. 7.50 "

S. 36 1/4° E. 5.00 "

Meanders, T. 21 S., R. 25 E.

Chains

S  $44^{\circ} 31'$  E. 4.04 chs. To meander cor  
frac. secs 9 + 16

Land, level

Soil, rocky; 4<sup>th</sup> rate  
No timber.

October 27: At this meander cor I set  
off  $12^{\circ} 40'$  S. on the decl. arc; and at  
 $11\frac{1}{2}$   $44^{\text{m}}$  a.m.l.m.t. observe the sun on  
the meridian; the resulting lat. is  
 $39^{\circ} 00'$

Hence in sec. 16.

Along rocky bank.

S.  $47^{\circ}$  E. 500 chs. Ledge 75 ft. high.

S.  $28\frac{1}{4}^{\circ}$  E. 5.20 "

S.  $13^{\circ}$  W. 4.60 "

S.  $51^{\circ}$  W. 7.00 "

S.  $79^{\circ}$  W. 6.00 "

N.  $81^{\circ}$  W. 4.51 " To meander cor.  
frac. secs. 16 + 17.

Land, level.

Soil, rocks. 4<sup>th</sup> rate

No timber

Hence in sec. 17.

Along rocky bank.

N.  $83\frac{3}{4}^{\circ}$  W. 10.00 chs.

N.  $81^{\circ}$  W. 11.50 chs.

S.  $84\frac{1}{2}^{\circ}$  W. 16.00 " At 9.90 chs. mouth  
of Trail Canyon, 75 lks  
wide, coarse S. <sup>coarse S.</sup>

S.  $67\frac{1}{2}^{\circ}$  W. 7.00 " At 220 chs. wash - 20 lks wide,

S.  $59^{\circ}$  W. 9.00 "

S.  $47^{\circ}$  W. 7.00 "

S.  $32^{\circ}$  W. 10.60 "

S.  $31^{\circ}$  W. 8.00 "

S.  $17\frac{1}{2}^{\circ}$  W. 9.75 "

S.  $14^{\circ}$  W. 13.80 "

S.  $8\frac{1}{2}^{\circ}$  W. 9.00 "

S.  $3\frac{1}{4}^{\circ}$  E. 4.51 " To meander cor.

Meanders, T. 21 S., R. 25 E.

chains

Land, broken.  
Soil, rocky; 4<sup>th</sup> rate  
Timber, some scrub cedar.  
No undergrowth

October 27-1910

October 23.

Hence in sec. 20  
over rocky bank  
S.  $0^{\circ} 45'$  W., 5.90 cha.  
S.  $36^{\circ}$  W., 5.00 cha.  
S.  $63^{\circ} 01'$  W. 3.83 cha. To meander  
cor. fract. secs. 19  
+ 20.

Land, level.

Soil, rocky.  
No timber.

Hence in sec. 19.

over level land.  
S.  $54\frac{1}{4}^{\circ}$  W., 13.40 cha.  
S.  $50^{\circ}$  W. 11.00 cha.  
S.  $46\frac{1}{2}^{\circ}$  W. 12.25 cha.  
S.  $54\frac{1}{2}^{\circ}$  W. 12.50 cha.  
S.  $43^{\circ}$  W. 13.80 cha.  
S.  $42\frac{1}{2}^{\circ}$  W. 14.00 cha.  
S.  $48\frac{1}{2}^{\circ}$  W. 10.60 cha.  
S.  $70\frac{1}{4}^{\circ}$  W. 6.00 cha.

N.  $86^{\circ} 02'$  W. 6.50 cha. To meander  
cor fract. secs.  
19 + 24.

Land, level.  
Soil, rocky.  
No timber.

Some undergrowth of willow

October, 23, 1910

## General Description.

This tp. contains rough broken mountainous and gently rolling land, and the soil ranges from rich sandy loam to rocky. The soil of the gently rolling land in secs. 6, 7, 31 & 35 is generally a rich sandy loam with a sub-soil of sandy loam, capable of producing abundant crops with irrigation. The soil of the remaining part is very rocky and can be classed as 4<sup>th</sup> rate. The mountainous portion is cut by deep canyons with vertical walls of sandstone from 200 to 400 ft. high and drains in a westerly direction. Scrub cedar & pinon forests are found throughout the entire tp., but are of no commercial value.

The tp. is well watered by the Grand river which flows through the northwestern portion and by many small springs. There are no settlers in this tp.

There are no indications of mineral in the tp.

Howard W. Miller  
Instrumentman, S.P.O.

FINAL OATHS OF DEPUTY SURVEYOR AND HIS ASSISTANTS.

LIST OF NAMES.

A list of the names of the individuals employed by Howard W. Miles,  
Instrumentman, United States Deputy Surveyor, to assist in running, measuring, and  
marking the lines and corners described in the foregoing field notes of the survey of the  
subdivision and meanders of T 21 S R 25 E.  
S. L. B. & M., Utah,  
showing the respective capacities in which they acted:

Fred Wright, Chainman ✓  
Karl Rothermund, Chainman ✓  
Roscoe Hallett, Moundman ✓  
Edward Jones, Moundman ✓  
Ben Eagle, Axman ✓  
Ben Eagle, Axman ✓  
Ben Eagle, Flagman ✓

FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted Howard W. Miles,  
Instrumentman, United States Deputy Surveyor, in surveying all  
those parts or portions of the subdivision and meanders  
of T 21 S R 25 E.

of the best  
Lake Base & meridian, State of Utah, which are represented  
the foregoing field notes as having been surveyed by him and under his direction; and that said survey  
is been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the  
monuments established, according to the instructions furnished by the United States Surveyor  
General for Utah.

Fred Wright, Chainman ✓  
Karl Rothermund, Chainman ✓  
Roscoe Hallett, Moundman ✓  
Edward Jones, Axman ✓  
Ben Eagle, Axman ✓  
Ben Eagle, Flagman ✓

scribed and sworn to before me this 27  
day of October, 190 }

○○○○○  
O SEAL O  
○○○○○

Howard W. Miles,  
Instrumentman G. L. D.

BOOK NO. 1

**FINAL OATH OF UNITED STATES DEPUTY SURVEYOR.**

I, \_\_\_\_\_, United States Deputy Surveyor, solemnly swear that, in pursuance of a contract received from \_\_\_\_\_, bearing date of \_\_\_\_\_, United States Surveyor General for \_\_\_\_\_, day of \_\_\_\_\_, 190\_\_\_\_\_, I have well, faithfully, and truly, in my proper person, and in strict conformity with the instructions furnished by the United States Surveyor General for \_\_\_\_\_, the Manual of Surveying Instructions, and the laws of the United States, surveyed all those parts or portions of \_\_\_\_\_.

For final oath of transitmen see book "Z<sup>1</sup>" T.24 S., R. 26 E.

of the \_\_\_\_\_ meridian, in the \_\_\_\_\_, which are represented in foregoing field notes as having been surveyed by me, and under my direction; and I do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the Manual of Surveying Instructions, and the special written instructions of the United States Surveyor General for \_\_\_\_\_, and in the specific manner described in the field notes, and the foregoing are the original field notes of such survey.

United States Deputy Surveyor

Subscribed by said \_\_\_\_\_, and sworn to before me }  
this \_\_\_\_\_ day of \_\_\_\_\_, 190 }



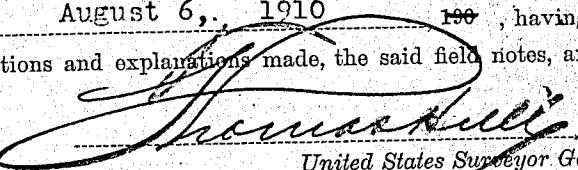
**APPROVAL.**

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Salt Lake City, Utah, June 25, 1913.

The foregoing field notes of the survey of \_\_\_\_\_ the subdivisional and meander lines of Township No. 21 South, Range No. 25 East of the Salt Lake Base Meridian, Utah,

executed by **Howard W. Miller**,  
under his contract No. A \_\_\_\_\_, dated August 6, 1910, having  
critically examined, and the necessary corrections and explanations made, the said field notes, as  
surveys they describe, are hereby approved.



Howard W. Miller  
United States Surveyor G

I certify that the foregoing transcript of the field notes of the above-described surveys in \_\_\_\_\_, has been correctly copied from the original notes on file in this office.

United States Surveyor G

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MAR 1911

BOOK A-378

804

Book "O"

## FIELD NOTES

OF THE SURVEY, OF THE

Resurvey and retracement of the  
West boundary T. 21 S., R. 25 E.

of the Great Salt Lake Base and Meridian, Utah

AS SURVEYED BY

Howard W. Miller, United States Deputy Surveyor,  
Transitman

Assignment Group 11, under his Contract No. 11, dated August 6, 1910

Survey commenced September 17, 1910

Survey completed October 31, 1910

-1-

## NAMES AND DUTIES OF ASSISTANTS.

Fred Wright, chairman  
Karl Rothermund chairman  
Roose C. Hallett, moudman  
Edward Jones, , admnan  
Ben Egle ; flagman

BOOK A-378

INDEX DIAGRAM.

Township 21 South, Range 25 East

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6	19	20	21	22	23	24
5	20	28	27	26	25	
32	31	32	33	34	35	36

Meanders Page.....

We, Gladd Wright and Karl Rothermund, do solemnly swear that we will well and faithfully execute the duties of chainmen; that we will level the chain upon even and uneven ground, and plumb the tally pine, either by sticking or dropping the same; that we will report the true distances to all notable objects, and the true lengths of all lines that we assist in measuring, to the best of our skill and ability, and in accordance with instructions given us, in the survey or retracement & survey of the west boundary T. 21 S., R. 25 E. of the S.L.B. & U., Utah.

Gladd Wright

Chairman

Karl Rothermund, Chairman.

Subscribed and sworn to before me this 17  
day of September, 1910



Howard W. Miller  
Instrumentman G.P.C.

We, Roscoe C. Hallett and  
do solemnly swear that we will well and truly perform the duties of moundsmen in the establishment of corners, according to the instructions given us to the best of our skill and ability, in the survey or retracement & survey of the west boundary of T. 21 S., R. 25 E. of the S.L.B. & U., Utah.

Roscoe C. Hallett

Moundsman

Moundsman

Subscribed and sworn to before me this 17  
day of September, 1910



Howard W. Miller  
Instrumentman G.P.C.

We, Edward Jones and  
do solemnly swear that we will well and truly perform the duties of axman in the establishment of corner and other duties, according to instructions given us to the best of our skill and ability, in the survey or retracement & survey of the West Boundary of T. 21 S. R. 25 E. of the S.L.B. & U., Utah.

Edward Jones

Axman

Subscribed and sworn to before me this 17  
day of September, 1910



Howard W. Miller  
Instrumentman G.P.C.

I, Ben Ogle, do solemnly swear that I will well and truly perform the duties of flagman according to instructions given me, to the best of my skill and ability, in the resurvey or retracement & survey of the west boundary of T. 21 S., R. 25 E. of the S.L.B. & U., Utah.

Ben Ogle

Flagman

Subscribed and sworn to before me this 17  
day of September, 1910



Howard W. Miller  
Instrumentman G.P.C.

Resurvey West boundary T 21 S. R. 25 E.

Chamis

Survey commenced October 7, 1910  
and executed with a W. & L. E.  
Surley solar compass No 1043.

For description & test of instrument  
see book "A" of this survey.

To examine the adjustments of the  
transit and correct the level and  
collimation errors; then, to test the  
solar apparatus, by comparing its  
indications, resulting from solar  
observations on Polaris, I proceed as  
follows:

At the cor. of Tps. 21 & 22 S., Rs 24 & 25 E.  
latitude  $38^{\circ} 36' 29''$  N. longitude  $109^{\circ}$   
 $14' 10''$  W. I set off  $38^{\circ} 56\frac{1}{2}'$  N. on the  
lat. arc;  $5^{\circ} 23.5'$  S. on the decl. arc;  
and at  $4^{\text{h}} 48^{\text{m}}$  p.m., l.m.t.,  
determine with the solar a meridian  
and mark a point thereof, on a  
stone firmly set in the ground, 5  
chs. N. of the cor.

At  $6^{\text{h}} 29.9^{\text{m}}$  p.m. l.m.t.  
I observe Polaris at eastern elong-  
ation in accordance with the  
Manual of Instructions, and  
mark a point in the line thus  
determined, on a peg driven in  
the ground 5 chs. N. of my station

October 7, 1910

October 8: At  $7^{\text{h}}$  a.m., l.m.t. I  
lay off the azimuth of Polaris  $1^{\circ} 30.6'$   
to the west, and mark the meridian  
thus determined, by cutting a  
groove in the stone set October, 7,  
on which meridian falls 0.4 m. east  
of the mark determined by the solar.

At  $7^{\text{h}} 48^{\text{m}}$  a.m., l.m.t., I set off  $38^{\circ} 56\frac{1}{2}'$   
on the lat. arc;  $5^{\circ} 40'$  S. on the  
decl. arc; and mark a point in

Resurvey west boundary T. 21 S.R. 25 E.

the meridian determined with the solar, by a cross on the stone already set 5 chs. N. of my station; This mark falls  $0^{\circ} 4^{\prime}$  east of the meridian established by the Polaris observation.

The solar apparatus by 8 A.M. & a.m. observations defines <sup>position for</sup> meridians respectively about  $0^{\circ} 21^{\prime}$  West &  $0^{\circ} 21^{\prime}$  east of the meridian established by the Polaris observation; therefore I conclude that the adjustments of the instrument are satisfactory. The magnetic bearing of the true meridian at 8<sup>15</sup>" a.m. is  $77^{\circ} 15' 30''$  W. the angle thus determined gives the mag. decl.  $15^{\circ} 30' E.$

From the tp. cor. already described. Retrace

North, along the W. bdy. of the tp. bet secs. 31 & 36

- 40.00 No trace of the  $\frac{1}{4}$  cor. can be found.
- 80.00 No trace of the cor. of secs. 25, 30, 31 & 36 can be found.
- 12000 No trace of the  $\frac{1}{4}$  sec. cor. bet. secs 25 & 30 can be found.

Set an iron post, 3 ft. long, 1 in. in dia. 26 ins. in the ground for  $\frac{1}{4}$  sec. cor. marked on brass cap  $\frac{1}{4}$  S 25 on W. half and S 30 on E. half, from which

A pinon, 6 ins. diam., bears  $77^{\circ} 79 \frac{1}{4}' E.$

39 lks. dist., marked  
 $\frac{1}{4}$  S 30 BT

A cedar, 17 ins. diam., bears S.  $56^{\circ} 4' W.$

123 lks. dist., marked

$\frac{1}{4}$  S 25 BT

Hence from

South, resurveying line bet. secs. 25 & 30

Re-survey West boundary T. 21 S., R. 25 E.  
chain.

Over rolling mesa top thru  
scattering cedar & piñon.

37.30 South side of mesa bears N.E. & W.  
Descend abruptly over ledges.

40.00 Point for cor. of secs. 25, 30, 31 & 36  
falls on ledge where cor. cannot  
be set.

42.30 At base of ledges and mesa, bears  
E. & W

Set an iron post, 3 ft. long, 3 in. in  
dia., 24 in. in the ground for  
witness cor. to secs. 25, 30, 31 & 36  
marked on brass cap, top of page  
representing north

T 21 S

R 24 E R 25 E

S 25 S 30

<sup>w.c.</sup>  
S 36 | S 31

raise a mound of stone 2 ft. base  
 $1\frac{1}{2}$  ft. high W. of cor.

Pits impracticable

Sand mountainous draining W.  
Soil, rocky, very poor, sub-soil  
rocky. Undergrowth some sage  
brush. No grass. Juniper scrub  
cedar & piñon.

South, re-surveying line bet. secs.  
31 & 36 Counting distances from  
true cor. point.

Over land sloping South  
descend.

10.30 Wash, course  $3.80^\circ$  W.

Ascend.

11.65 Low ridge, bears E. & W  
descend

31.50 Road, bears E. & W

40.00 Point for  $\frac{1}{4}$  cor. in wash, course W.

40.50 Set an iron post, 3 ft. long, 1 in.

Resurvey West boundary of T. 21 S., R. 25 E.  
charts.

mi. dia. 26 mis. in the ground  
for witness cor. to the  $\frac{1}{4}$  sec. cor.  
marked on brass cap T 21 S on  
N. half, R 25 E S 31 on E. half  
and R 24 E S 36 on W. half,  
with W C  $\frac{1}{4}$  to the north, I dig  
pits  $18 \times 18 \times 12$  mis. N. + S. of post, 3  
ft. dist., raise a mound of earth  
 $3\frac{1}{2}$  ft. base  $1\frac{1}{2}$  ft. high W. of cor.  
Wash, coarse gravel.

70.60

A well brace East 500 ft.

79.50

The cor. of Tps. 21 + 22 S Rs. 24 + 25 E.

Land rolling draining west  
soil rich sandy loam + rocky.  
Sub-soil, sandy loam. Some  
undergrowth of sage brush.  
Good grass for grazing.  
No timber

---

West boundary T. 21 S., R. 25 E.

chains:

From the  $\frac{1}{4}$  sec. cor. bet. secs. 25 +  
30 I flag north along the W. bdy.  
of the tp and fall 38 lks. West of the  
cor. of secs. 13, 18, 19 + 24 heretofore de-  
scribed.

This falling answers to a correction  
of  $0^{\circ}11'$  or 25.3 lks. per mile.

I return to the  $\frac{1}{4}$  sec. cor. bet. secs.  
25 + 30 heretofore described.

Hence from

$7.0^{\circ}11'$  E., on true line bet. secs. 25 + 30  
Over rolling mesa top thru dense  
forest of cedar + juniper.

10.110

Hollow, drains SW.

Ascend

30.12

Ridge, bears E. + W.

31.12

Decked abruptly over ledges into  
Grand, river canyon.

38.58

250 ft below top, on left bank of  
Grand, river

Set an iron post, 3 ft. long, 3 in. in  
dia., 24 in. in the ground and  
mound of stone for meander cor  
of frac. sec. 25 + 30 marked on  
brass cap.

T. 21 S on N. half

R. 25 E S. 30 on E half,

R. 24 E S. 25 on W half with  
M C to the north.

raise a mound of stone, 2 ft.  
base,  $1\frac{1}{2}$  ft. high of cor.

Pit impracticable

Land rolling + mountainous

S. 31.12 chs. SW slope land draining  
West. soil, rocky very poor. sub  
soil, rocky, bed rock close to surface.

N. 745 chs. Steep N. slope of canyon.

Soil, rocks. Sub soil rocks. No  
grass. no undergrowth. Some  
cedar + juniper timber.

West boundary T. 21 S., R. 25 E.

October 8: Sky overcast, observations for lat. impossible.

October 8-1910

October 24: At 8<sup>h</sup> 15<sup>m</sup> a.m. l.m.t.  
I set off  $38^{\circ} 58'$  on the lat. arc;  
 $11^{\circ} 34' S.$  on the decl. arc and  
determine a meridian with the  
solar at the meander cor. of fract  
secs 25 & 30 on the left bank of  
Grand river.

Hence from  
 $7.0^{\circ} 11' E.$

To determine the distance across  
river I set a flag on line on right  
bank. From flag on right bank  
measure a base line  $589^{\circ} 49' E. 6.05$   
chs. to a point from which flag  
at meander cor. on left bank  
bears  $528^{\circ} 48' W.$  which gives for  
distance tan  $61^{\circ} 23' \times$  base or  $1.83 \times 6.05$

$= 11.09$  chs. or  $11.09 \times 100 = 1109$  ft.  
From same corner point for cor.  $10.24 - 7.5 + 3.0$  in river.  
9.67 on right bank Grand river, set  
an iron post, 3 ft. long, 3 in. in  
dia., 24 in. in the ground for  
meander cor. fract. secs. 19 & 24  
marked on brass cap.

T 21 S on N. half

R 25 E S 19 on E. half

R 24 E S 24 on W. half, with

M C to the south, raise  
a mound of stone, 2 ft. base,  $1\frac{1}{2}$   
ft. high N. of cor.

Pit impracticable

Ascend from canyon over ledges  
top of mesa & ledges, 200 ft. above  
river, bears E. & W.

Gradually ascend

low ridge, bears E. & W

40.00 Set an iron post, 3 ft. long, 1 in. in

$589^{\circ} 49' E. S.$   
105  
 $7.0^{\circ} 11' E.$

S 28° 48' W.

West boundary T. 21 S., R. 25 E.

chains

- dia. 26 ms. in the ground, for  $\frac{1}{4}$   
sec. cor. marked on brass cap  
 $\frac{1}{4}$  S. 24° on W. half and S. 19° on E.  
half, dig pits  $18 \times 18 \times 12$  ms. N. & S. of  
post. 3 ft. dist., raise a mound of  
earth  $3\frac{1}{2}$  ft. base  $1\frac{1}{2}$  ft. high W. of cor.  
Wash, 15 lks. wide, coarse W.  
Ascend 75 ft  
61.00 Low ridge, bears E. + W.  
Descend  
80.00 The cor. of secs. 13, 18, 19 + 24.  
Land, mountainous  
S. 26.85 chs. SE. slope of canyon. Soil,  
rocky + bed rock, very poor. No  
undergrowth, no grass. N. 53.15. West  
slope of mesa draining west.  
Soil, poor sand sub-soil sandy  
bed rock about 3 ft. deep. Under-  
growth sage brush. No grass.  
Juniper, scrub cedar + penon

October 24, 1910

Retracement W. bdy T 21 S. R 25 E

chain

Sept 17: At 1<sup>h</sup> 55<sup>m</sup> P.M., I m.t. I set off  $39^{\circ} 01' 42''$  on the lat. arc;  $2^{\circ} 21' 47''$  on the decl. arc; and determine a meridian with the solar at the closing cor. of sec. T 21 S., R 24 + 25 E. which is a sandstone  $18 \times 12 \times 10$  ins. above ground, firmly set and marked and witnessed as described by the Surveyor General. I destroy all traces of the old cor. and re-establish it at the same point as follows.

Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in the ground for closing cor. of T 21 S R 24 + 25 E marked on brass cap

CCT 20 S R 25 E S 30 R 24 E S 36 in N May

T 21 S on Shaft

R 25 E S 6 in S.C.

R 24 E S 1 in SW quadrant

dig pits  $24 \times 24 \times 12$  ins.  
clockwise on each line, E. & W. 3  
ft. and S of post 7 ft. dist., raise  
a mound of earth 5 ft base, 2 ft  
high S. of cor.

Hence from

South, retracing bet. secs. 1 & 6.

40.16 The  $\frac{1}{4}$  sec. cor. which is a sand-  
stone,  $16 \times 9 \times 6$  ins. marked as  
described by the Surveyor general  
I destroy all traces of the old cor.  
and re-establish it at the same  
point as follows

Set an iron post, 3 ft. long, 1 in. in  
dia., 26 ins. in the ground for  $\frac{1}{4}$   
sec. cor. marked on brass cap  $\frac{1}{4}$   
S 1 on W. half & S 6 on E. half, dig  
pits.  $18 \times 15 \times 12$  ins. N. & S. of post. 3 ft dist.  
raise a mound of earth 3 $\frac{1}{2}$  ft base,

Retracement West boundary T. 21 S. R. 25 E.  
chain

1<sup>1/4</sup> ft. high W. of cor.

From the 1<sup>1/4</sup> sec. cor. I continue  
South

40.14 The cor. of secs. 1, 6, 7+12 which is  
a sandstone  $18 \times 11 \times 4$  ins. marked  
as described by the surveyor  
general. I destroy all traces of the  
old cor. and re-establish it at the  
same point as follows.

Set an iron post, 3 ft. long, 3 ins. in  
dia., 24 ins. in the ground for cor  
of secs. 1, 6, 7+12 marked on brass  
cap

T 21 S on N. bay

R 24 E S 1 in NW.

R 25 E S 6 in NE.

S 7 in SE. and

S 12 in SW. quadrant, dig  
pits  $18 \times 18 \times 12$  ins. in each sec. 5 $\frac{1}{2}$  ft  
dist., raise a mound of earth  
4 ft. base, 2 ft. high W. of cor.

South, retracing bet. secs. 7 + 12.

40.10 Fall 7 ekes E. of the 1<sup>1/4</sup> sec. cor.  
which is a cross on solid sand-  
stone bedrock. and witnessed  
by a mound of stone. I renew  
cross and marks.

The true course of this line is S. 0°06'  
W. and the distance is 40.10 chs.

From the 1<sup>1/4</sup> sec. cor. I continue  
South

40.12 Fall 3 ekes. E. of the cor. of secs  
7, 12, 13 & 18 which is a sandstone  
 $20 \times 10 \times 4$  ins., marked as described  
by the surveyor general.

I destroy all traces of the old cor  
and re-establish it at the same  
point as follows.

Set an iron post, 3 ft. long, 3 ins. in

Retracement West boundary T 21 S R 25 E.

chain  
dia., 24 ins. in the ground for cor.  
of secs. 7, 12, 13 & 18 marked on brass  
cap

T 21 S on N. half,

R 24 E S 12 in NW.,

R 25 E S 7 in NE.,

S 18 in SE. and

S 13 in SW quadrant,  
raise a mound of stone, 2 ft. base,  
 $1\frac{1}{2}$  ft. high W. of cor. Pts impracticable  
The true course of this line is S $0^{\circ}03'W$ , and the  
distance is 40.72 ch.

South, retracing bet. secs. 13 & 18

40.16 Fall 7 lks. E. of the  $\frac{1}{4}$  sec. cor. which  
is a sandstone  $16 \times 6 \times 5$  ins. marked  
as described by the surveyor general  
I destroy all traces of the old cor.  
and re-establish it at the same point  
as follows

Set an iron post, 3 ft. long, 1 in. in  
dia., 26 ins. in the ground for  $\frac{1}{4}$  sec.  
cor. marked on brass cap  $\frac{1}{4}S 13$   
on W. half and S 18 on E. half, raise  
a mound of stone, 2 ft. base,  $1\frac{1}{2}$  ft.  
high W. of cor.  
Pts impracticable

The true course of this line is  
S $0^{\circ}06'W$ . and the distance is 40.40 ch.  
From the  $\frac{1}{4}$  sec. cor. I continue  
South.

40.27 Fall 96 lks. E. of the cor. of secs.  
13, 18, 19 & 24 which is a sandstone  
 $18 \times 10 \times 4$  ins. marked as described  
by the surveyor general  
I destroy all traces of the old cor.  
and re-establish it at the same  
point as follows.

Set an iron post 3 ft. long, 3 ins. in  
dia., 24 ins. in the ground for cor.  
of secs. 13, 18, 19 and 24, marked

Retracement West boundary T. 21 S. R. 25 E.  
chain

on brass cap

T 21 S on N. half,

R 24 E S 13 in NW,

R 25 E S 18 in NE.,

S 19 in SE. and

S 24 in SW. quadrant,

dig pits 18 x 18 x 12 ins. in each sec.

5 1/2 ft. dist., raise a mound of earth  
if ft. base, 2 ft. high W. of cor.

The true bearing of this line is

S 1° 22' W., and the dist. is 40.28 chs.

September 17, 1910

For General description see book  
"N" of this survey

Howard Miller  
M.S. Instrumentman

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**Page**

FINAL OATHS OF DEPUTY SURVEYOR AND HIS ASSISTANTS.

LIST OF NAMES.

A list of the names of the individuals employed by Howard W. Miller  
Instrumentman, United States Deputy Surveyor, to assist in running, measuring, and  
marking the lines and corners described in the foregoing field notes of the survey of, retrace-  
ment and survey of the west boundary of T. 21 S. R. 25 E.  
of the S. L. B. & M., Utah, showing the respective capacities in which they acted:

Fred Wright, Chainman. ✓  
Karl Rothermund, Chainman. ✓  
Roscoe C. Hallett, Moundman. ✓  
Edward Jones, Moundman. ✓  
Ben Egle, Axman. ✓  
Ben Egle, Flagman. ✓

FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted

Howard W. Miller, Instrumentman, United States Deputy Surveyor, in surveying all  
those parts or portions of the resurvey, retracement and  
survey of the west boundary of T. 21 S.,  
R. 25 East

of the Salt

Lake Base meridian, State of Utah, which are represented  
in the foregoing field notes as having been surveyed by him and under his direction; and that said survey  
has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the  
corner monuments established, according to the instructions furnished by the United States Surveyor  
General for Utah.

Fred Wright, Chainman. ✓  
Karl Rothermund, Chainman. ✓  
Roscoe C. Hallett, Moundman. ✓  
Edward Jones, Axman. ✓  
Ben Egle, Axman. ✓  
Ben Egle, Flagman. ✓

Subscribed and sworn to before me this 24 }  
day of October, 1910 }

Howard W. Miller  
Instrumentman G. P. O.



FINAL OATH OF UNITED STATES DEPUTY SURVEYOR.

I, \_\_\_\_\_, United States Deputy Surveyor, do solemnly swear that, in pursuance of a contract received from \_\_\_\_\_, bearing date of \_\_\_\_\_, United States Surveyor General for \_\_\_\_\_, day of \_\_\_\_\_, 190\_\_\_\_\_, I have well, faithfully, and truly, in my own proper person, and in strict conformity with the instructions furnished by the United States Surveyor General for \_\_\_\_\_, the Manual of Surveying Instructions, and the laws of the United States, surveyed all those parts or portions of \_\_\_\_\_.

For final oath of transitman see book "Y" T. 25 S., R. 26 E.

of the \_\_\_\_\_ meridian, in the \_\_\_\_\_ of \_\_\_\_\_, which are represented in the foregoing field notes as having been surveyed by me, and under my direction; and I do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the Manual of Surveying Instructions, and the special written instructions of the United States Surveyor General for \_\_\_\_\_ and in the specific manner described in the field notes, and that the foregoing are the original field notes of such survey.

United States Deputy Surveyor

Subscribed by said \_\_\_\_\_, and sworn to before me }  
this \_\_\_\_\_ day of \_\_\_\_\_, 190\_\_\_\_\_ }



APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Salt Lake City, Utah, June 25, 1913

The foregoing field notes of the survey of retrace ment and resurvey of the West Boundary of Township No. 21 South, Range No. 25 East of the Salt Lake Base and Meridian, Utah,

executed by Howard W. Miller  
under his contract No. A, dated August 6, 1910, 100\_\_\_\_\_, having been critically examined, and the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

A large, cursive signature of Howard W. Miller.

United States Surveyor General

I certify that the foregoing transcript of the field notes of the above-described surveys in \_\_\_\_\_, has been correctly copied from the original notes on file in this office.

United States Surveyor General